



OPEN *Opportunities*

*Courses and study packs in Arts,
Computing, Environmental
Education, Mathematics, Science,
Social Sciences and Technology*

This brochure has been prepared by the Academic Administration (Students) Division, The Open University, Walton Hall, Milton Keynes MK7 6AA.

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Cover Pleiades star cluster
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CONTENTS

	page		page
Introduction			2
How to find your course or study pack			5
Arts			
Interdisciplinary	8	Music	14
Art history	11	Philosophy	16
History	12	Regional studies	16
Literature	13	Religion	17
Computing			
General	20	Artificial intelligence	23
Programming	21	Software engineering	24
Information systems	22		
Environmental education			
Interdisciplinary	28	Environmental history	30
Conservation	28	Environmental science	30
Mathematics			
Interdisciplinary	34	Statistics	38
Pure mathematics	34	History of mathematics	39
Applied mathematics	35		
Science			
Biology	42	Earth sciences	47
Chemistry	45	Physics	49
Social sciences			
Interdisciplinary	54	Government and politics	58
Applied social studies	55	Psychology	59
Economics	56	Social policy	62
Geography	57	Sociology	64
Technology			
Interdisciplinary	70	Engineering mechanics	79
Systems	71	Manufacturing	80
Design	73	Materials	81
Electronics and communications	74		
'University' courses			85
How to apply			87
Regions, Regional Centres and study centres			90

OPEN OPPORTUNITIES 1991/92

INTRODUCTION

Continuing your personal and professional education with the Open University

The Open University was established by Royal Charter in 1969 to provide educational opportunities for adults who wish to study in their own homes and in their own time. Like all universities it can grant degrees and other qualifications. Under its Charter it also has a special responsibility to further the educational well-being of the community as a whole.

This year, about 150,000 students will be studying with the University. Some will be working as undergraduate or postgraduate students towards a BA or a higher degree, others will be studying single courses, diplomas or study packs as associate students. This brochure describes courses and packs you can study as an associate student – that is, without committing yourself to a degree or other qualification.

Courses and study packs

Our general brochure *Studying with the Open University* is an introduction to all the study programmes offered by the University. *Open Opportunities* describes in more detail a wide cross-section of those courses and study packs. It has been designed for potential students who are not planning, in the first instance, to study for a qualification. The courses and packs are at a variety of levels so that you can begin at a level that suits you.

Study packs

Study packs are self-contained, so you can work through them at your own pace, either on your own or in a group. You can buy them at any time of the year either by using the study pack order form in this brochure or by sending an official purchase order. There are packs in a wide variety of subjects and at different levels, covering both personal interests and professional fields, so there should be something to suit you. Prices begin at about £10.

Nine-month degree-level courses

These courses are at the same academic level as courses taken by students working for degrees at other British universities, and most are in fact drawn from our undergraduate programme. As an associate student on these courses you receive the same study material as undergraduate students, attend the same tutorials and residential schools, share the same tutors and have your work assessed in the same way.

There are more than 150 nine-month courses for you to choose from. This brochure describes those in arts, computing, environmental education, mathematics, physical and social sciences and in technology. A separate publication has been prepared for teachers and those interested in education courses; please see page 66.

Choosing your study level

First we wish to emphasize that over the years many students with few formal educational qualifications have successfully completed our courses.

Each course is described in terms of level. A second-level course is at least equivalent in standard to a first- or second-year university degree course. A third- or fourth-level course makes the same demands as the final year of an honours degree course.

All second-level courses, and especially those which are described as introductory, such as *Introduction to pure mathematics*, will give you advice and guidance on how to study, but they still make the same demands as any other university course. You will be expected to read set texts, absorb facts and extract relevant information. For written work you will have to prepare and present logical analyses of material supported by reasoned arguments. There are broadcasts, cassettes and tutorials to help you sort out some of the problems.

Third-level courses are of a higher standard. The skills are the same but they may also include project work and extended essays. They tend to expect you to take a more independent approach to learning and rely less on audio-visual support.

The amount of background knowledge of the subject you will need varies. For a few courses at both levels you need a substantial amount, others require some knowledge – perhaps to A-level standard. This is always specified in the individual course description. Very many courses, including some at third level, have been designed for students who have no special knowledge of the subject area, so they can be tackled by anyone who has sound study skills.

If this sounds daunting, and especially if you have not studied for many years, think carefully about whether you should brush up your study skills. Your Regional Enquiry Service will give you more advice and information. Some successful students have taken study skills courses at local colleges while they have been waiting for their Open University courses to start. Others have tested the water by purchasing a study pack.

If you are not sure whether your knowledge of the subject will be sufficient you can ask your Regional Enquiry Service for advice. They will probably send you more information and may include 'course-related notes', which explain the course content and academic standard in more detail. If you decide to apply for a course and are offered a place, the course-related notes will be sent to you automatically before you have to accept the offer or pay any fees.

Joining the Open University

There are no entrance requirements for any of the packs or courses in this brochure (except one diploma). You need only be resident in an EC country and aged 18 or over to study a course, or 16 to buy a pack. If you are resident outside the United Kingdom, please read page 88 and note that some of the courses in this brochure may not be available to you.

The Open University's intention is to create conditions in which students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, colour, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, family circumstance, sexual orientation or other irrelevant distinction. The University has an action plan to implement this policy. Our open admissions policy reflects our belief that everyone should have an equal opportunity to study. The only things that affect the offer of a place on a course are the date of your application and the number of places available.

Nine-month courses

If you apply for one of these courses and are offered a place, we will send you the course-related notes before you have to decide whether to accept the offer and make any payment, and your Regional Centre will link you to a counsellor in your area. Please read the notes carefully and, if you have any doubts, ask the counsellor for advice *before* you accept your place on the course.

Nine-month degree-level courses start in February 1992 and the closing date for applications is 7 October 1991.

Studying with the Open University

Workload

If you choose a *pack*, you can study at your own pace and take as long as you like.

Nine-month degree-level courses are described as either a full or a half credit's worth of study. A full-credit course is likely to take 12 to 15 hours of work each week. A half-credit course will take about 7 hours each week.

You could think of it in terms of a whole day's work every week-end for a half-credit course. Full-credit courses mean making room in your life for twice this amount of work.

All these courses run from February to October.

Study materials

A *pack* will contain all the materials you need. Packs vary greatly; some consist mainly of printed text, there may be audio or video cassettes and special items such as illustrative postcards or wall charts, and there may be different versions of the pack for individuals and for groups.

Materials for a *course* are likely to be sent to you in several separate mailings containing study texts, audio or video cassettes and any notes to do with radio and television programmes. Many courses include radio

and television programmes; others have cassettes as well as or instead of broadcasts. The television programmes are shown on BBC1 and BBC2. The radio broadcasts are at present on Radio 3 VHF and Radio 5 medium wave. If you miss any broadcasts you may be able to borrow cassettes from our Broadcast Programme Loan Scheme; information about this will be sent to you in your first course mailing. You can see and hear the broadcasts before you apply to join the University; details of the programmes are given in *The Times Higher Educational Supplement* and in some daily newspapers.

Some courses include a 'home kit' – usually equipment with which to carry out experiments or practical work. This is lent to you for the course and must be returned at the end of it. Some kits may not be taken or sent overseas.

Tuition

For any nine-month course you will have a tutor to help you with the course material and mark and comment on your work. Correspondence with your tutor is the University's main form of teaching. Most courses have occasional group tutorials in large urban centres. You are not obliged to attend them, but most students find them very valuable. If you cannot attend the tutorials, telephone discussion with your tutor will be an important part of your studies. You are encouraged to use the facilities offered by the OU's local study centres. There are more than 250 throughout the country, most in colleges or other educational institutions; they are usually open on weekday evenings, sometimes on Saturdays.

You will also usually have a counsellor to help and advise you about educational matters, administrative arrangements, study methods and choosing further courses.

Assessment

All courses expect you to produce written work (assignments) which your tutor marks and comments on. Some courses set you work, usually multiple-choice questions, to send to Walton Hall for checking by computer.

Most courses have a written examination at the end. You can choose not to take the exam if you do not wish to obtain a certificate. External examiners from other educational institutions ensure that our awards are comparable with others in the UK.

Residential schools

Some courses have a residential school which you must attend if you want to be awarded a certificate. They are a week long and usually held in the summer. They include seminars and tutorials; field, laboratory and library work; projects; informal discussions and social activities. They give you a chance to immerse yourself in your course and meet your fellow-students.

The residential school fee (£143 in 1991) is not included in the course fee.

You can be excused from attendance if you have good reason; your Regional Enquiry Service will be able to advise you about this.

Home computing courses

If you take a 'home computing' course you must arrange your own access to a microcomputer that meets the University's specification. You will not be able to take the course without this equipment. If you are interested in one of these courses – they are identified in the individual course descriptions – you should ask your Regional Enquiry Service for the specification. The University has arranged discount purchase schemes to help its students obtain the computing equipment they need.

There is a Help Desk for general enquiries about home computing, open during normal office hours. The telephone numbers are 0908 653972 and 071 435 9624; the address is ACS Help Desk, The Open University, Walton Hall, Milton Keynes MK7 6AA.

Awards you can obtain

All courses offer a *course certificate* if you pass the course by satisfactorily completing the set work, attending the residential school (or being excused) if there is one, passing the exam and fulfilling the University's non-academic requirements such as payment of fees and return of equipment on loan. You will also receive a *results letter*. If you do not pass the course but remain registered throughout it, you will receive the results letter only.

Counting your courses towards a qualification

BA degree

If you decide later to study for a BA degree, you would be able to count most of the courses in this brochure towards it. Please ask your Regional Enquiry Service about the regulations for the BA degree programme.

Diplomas and certificates

If you successfully complete specified sets of courses you can obtain *diplomas* or *certificates*. Those described in this brochure are:

Advanced Diploma in Criminology (Prison Studies) – page 55

Professional Diploma in Social Work with Deaf People – page 56

Information about other brochures and qualifications can be found on page 5.

External recognition of courses

If you want a professional qualification, you may be able to count your Open University studies towards membership of a professional institute, or you may be given exemption from a qualifying examination. Some courses can help you to gain admission to other institutions of higher education. If you would like more information about external recognition, please ask your Regional Enquiry Service.

Students with disabilities

We know from experience that the Open University's study methods can be particularly suitable for people with physical or sensory impairment. We will do all we can to enable you to take part as fully as your circumstances allow in all aspects of study. All Regional Centres, together with the Office for Students with Disabilities at Walton Hall, provide services adapted to individual students' needs. If you accept a course, we can offer:

- For those with a visual or hearing impairment, the opportunity to attend a week-end residential course on study skills.
- Course material on audio cassette for most nine-month courses.
- Transcripts of many radio and television programmes, audio and video cassettes.
- Comb-bound course material for those with severely impaired manual dexterity.
- Arrangements to help with tutorials.
- Assistance at residential school, including helpers and various kinds of equipment.
- Special arrangements for exams, such as the use of a typewriter, word processor, an amanuensis, extra time or rest breaks, question papers in large print, on tape or in braille. If necessary you can take your exam at home or in a special centre.

Whatever your disability or special requirement, please let us know as early as possible, preferably on your application form, so that we can do our best for you.

A few courses have features which may make it inadvisable for people with certain disabilities to study them. This is stated in the course description. Your Regional Enquiry Service will be able to help if you are in any doubt about which courses are suitable for you.

HOW TO FIND YOUR COURSE OR STUDY PACK

This brochure is one of a series describing the University's many different study programmes. It is intended for use with the introductory brochure *Studying with the Open University*, which contains brief information about all the programmes, talks about how our courses and other study materials are constructed and gives you some idea of what it will mean to be a part-time student with the Open University.

This brochure covers eight broad academic areas:

- Arts
- Computing
- Environmental Education
- Mathematics
- Science
- Social Sciences
- Technology
- 'University'

Within these areas we have listed courses and study packs under subject headings, unless they cover several subjects, when we call them 'interdisciplinary'. If there is a clear overlap between subject areas we have tried to make appropriate cross-references; nevertheless you should be careful to look in all the areas where your own interests may be represented. *Within each subject area we have started with study packs followed by courses at second, third, fourth, professional and postgraduate level.*

How to apply

When you have found the course or study pack you want, you will be directed to the appropriate section of 'How to Apply', which begins on page 87.

Pack prices are fixed only until 31 December 1991. If you are buying in 1992, please ring the Learning Materials Sales Office (telephone 0908 652152).

Other brochures

If you can't find what you want in this brochure please remember that there are brochures covering other areas which may interest you.

Community Education Study packs to help people learn about their everyday lives and roles within families, the workplace and the community (see page 86).

Health and Social Welfare Study packs, courses and a qualification for professionals in health and social welfare and anyone else who has an interest in this area (see page 63).

Management Study packs, courses and qualifications for managers in all kinds of organizations and at all levels (see page 72).

Professional Development in Education Study packs, courses and qualifications for professionals and others, including parents, who have an interest in education (see page 66).

Computing and Manufacturing Postgraduate courses and qualifications in Computing for Commerce and Industry, and Manufacturing: Management and Technology (see page 25).

Digital Telecommunications Two short courses in switching and transmission (see page 75).

Guide to the BA Degree Programme Our modular undergraduate programme.

Taught Master's Degree Prospectus Taught higher degrees in education, literature, computing, manufacturing, mathematics and management.

Research Degree Prospectus Opportunities for full- and part-time research study.

To obtain any of these brochures please write to the Central Enquiry Service, The Open University, PO Box 71, Milton Keynes MK7 6AG or telephone 0908 653231.

For more information and advice

The information given in this brochure is of necessity limited and you may feel you need more. If so, or if you would like advice about what to choose, you can get help from the enquiry service in your Regional Centre; addresses and telephone numbers are on page 90.

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

CONTENTS

Interdisciplinary

8

Fifth-century Athens: democracy and city state

Rome: the Augustan age

Culture and belief in Europe 1450–1600

The rise of scientific Europe 1500–1800

The Enlightenment

Science, technology and everyday life 1870–1950

Religion in Victorian Britain

Liberation and reconstruction: politics, culture and society in France and Italy
1943–1954

Art history

11

Looking into paintings

Art in fifteenth-century Italy

Modern art and Modernism: Manet to Pollock

History

12

Topics in the history of mathematics

Themes in British and American history: a comparative approach c1760–1970

War, peace and social change: Europe 1900–1955

Literature

13

W. B. Yeats

James Joyce

Women, writing and culture

Shakespeare

Literature in the modern world

Music

14

Principles of orchestration

The rise of jazz

The rise of the symphony

Elements of music

Beethoven

From Baroque to Romantic: studies in tonal music

Philosophy

16

Philosophy of the arts

Life and death

Regional studies

16

Open London

Scottish studies

East Anglian studies: nineteenth century

Religion

17

Introduction to Hinduism

Introduction to Buddhism

The religious quest

ARTS

INTERDISCIPLINARY

Fifth-century Athens: democracy and city state

Course code A294

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This course is appropriate for anyone who has an interest in ancient Greece and Rome and would like to extend this interest by means of some systematic academic study. In particular it is intended for those who are interested in the relationship between the past and the present and the way this determines how we look at our own cultural heritage.

Previous knowledge required

You are not expected to have any previous knowledge of the subject.

Contents

The Athenians of the fifth century BC had an historically unique experience of direct democratic rule within a city state, and the course explores its diverse cultural and social implications. The Athenians regarded their political activity as the chief inspiration for their social and cultural achievement and as the basis of their wide-reaching and profitable empire. For us, it is the central point in a study of the most significant and well documented period of the ancient world. This interdisciplinary course introduces this aspect of classical Greece and enables you to study, appreciate and evaluate a wide selection of ancient source material including texts (in translation), buildings and other works of art and artefacts. A variety of different sources embody the central themes of the course, and the way in which the nature of our source material for classical Athens affects our study of the period is emphasized.

See Section A of How to Apply

Rome: the Augustan age

Course code A293

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Possibly available for the last time in 1992

This course introduces the main cultural, political and social features of the Roman empire in the late first century BC and the early first century AD.

Who is the course for?

This course is suitable for anyone who has an interest in the civilization of Greece and Rome and wants to understand the political and cultural foundations of Europe.

Previous knowledge required

You are not expected to have any previous knowledge of the subject.

Contents

The age of Augustus saw the establishment, out of a period of military anarchy and political chaos, of a form of government which was to preserve the Roman empire for almost a further five hundred years. It was an age of great cultural achievement and remains one of the most richly documented of the ancient world. The course will enable you to study, appreciate and evaluate a wide selection of ancient source-material (in translation) – literary, historical, philosophical,



Tiberius, marble bust from Pozzuoli (Museo Nazionale, Naples. Photo: Alinari)

epigraphic, archaeological, architectural and artistic – which is presented in a course anthology, illustrated booklets and broadcasting.

The course studies not only social and political issues but also cultural achievements, which marked a high point in ancient literature and art. In the last sections of the course, where Rome is considered in the wider context of Italy and the provinces, particular attention is given to social life, architecture and town planning.

We hope that in many regions it will be possible to arrange visits to museums or archaeological sites.

Places on this course are limited, so an early application is advisable.

See Section A of How to Apply

Culture and belief in Europe 1450–1600

Course code A205

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV and radio programmes Personal tutor
Assignments and exams

Certification

Course certificate
Could count towards a BA degree

This is an interdisciplinary humanities course combining history, literature, drama, music, philosophy, art history and the history of science.

Who is the course for?

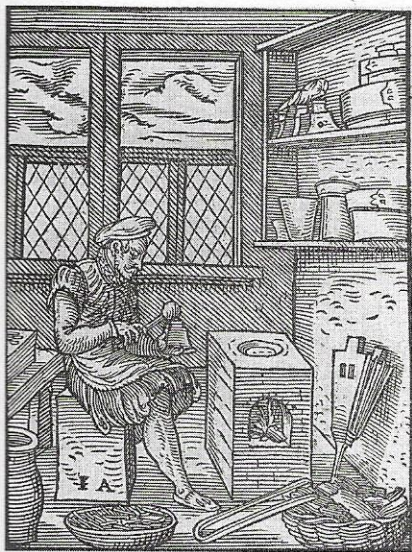
Anyone who is interested in the development of European culture during a key period in its development would enjoy this course. Music and the visual arts play an important part, and if you have impaired sight or hearing you will be offered alternative set work in these areas.

Previous knowledge required

This course requires the kind of humanities skills in reading and analysis which undergraduate students would get from the arts foundation course. You need no foreign languages, nor the ability to read music.

Contents

The course is about the period (1450–1600) when Europe began to take shape in a recognizably 'modern' form. Its themes are centred on debates about secularization and the consequences of religious change. Topics discussed include the influence of printing, the



Type caster, 1568 (reproduced by permission of the British Library Board)

changing role of women, the influence of humanism, the significance of minority communities and the expansion of Europe. Detailed case studies alternate with more thematic analyses of debates about historical and cultural change. Material for the thematic sections is drawn from all over Europe and the new world, while 'location case studies' deal with Venice and Antwerp, Spain, France and Britain.

See Section A of How to Apply

The rise of scientific Europe 1500–1800

Course code AS283

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Course readers
TV programmes Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course has been designed to be of very wide interest. It tackles a fundamental question of the modern world: why did modern science develop only in Europe? And why in some parts of Europe rather than in others? It is well established that Europe experienced a scientific revolution in the seventeenth century but the wider questions about why this happened have generally been overlooked. You will have an opportunity to investigate these questions.

Who is the course for?

The course will be equally interesting whether your background is in arts or in science.

Contents

Comparison and contrast are important features of the course. Most of the course explores similarities and differences among the countries of Europe. There are also comparisons between Europe, China and the lands of Islam, to consider what was common and what was distinctive in the prevailing conditions in these very different societies, and to judge whether this led to differences in scientific development.

After a broad introductory survey of Chinese science, Arabic science and the roots of European science, we concentrate on Copernicus in Poland and the spread of his challenging astronomical theory through Europe; on the conditions in Italy that stimulated Galileo's work and also led to his arrest and trial by the Inquisition; the distinctive environment of Portuguese and Spanish science; the developments in the German states; the surge of French science and the explosion of seventeenth-century English science; the reasons for the spread of Newtonianism; and the Scottish enlightenment. We also look at the peripheral zones rarely discussed in this context: Sweden, Russia and the Balkans. Finally, we draw conclusions based on these analytical studies.

See Section A of How to Apply

The Enlightenment

Course code A204

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Radio and TV
programmes Records Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Possibly available for the last time in 1992

This course explores the culture of the 'Age of Reason' at its height (very roughly the middle decades of the eighteenth century) through the close study of important texts and leading figures.

Who is the course for?

This course will be of interest to anyone who wants a fuller understanding of eighteenth-century culture. If you have

impaired sight or hearing you may have some difficulty.

Previous knowledge required

You are not expected to have any knowledge of this period.



Engraving from *Candide* (Paris, Bibliothèque Nationale. Photograph from Lauros-Giraudon)

Contents

The 'texts' include *Tom Jones* by Henry Fielding, *Candide* by Voltaire and *Les Liaisons dangereuses* by Laclos (both in English translation); writings by the philosopher David Hume and the economist Adam Smith; poetry by Pope from *An Essay on Man*; articles by Diderot, Voltaire and d'Alembert (in translation), selections from works by other *philosophes*; some chapters from Gibbon's *Decline and Fall of the Roman Empire*; documents on Frederick the Great; paintings and engravings by Chardin and Hogarth; representative works of English architecture and landscape; orchestral works by Haydn and Mozart's opera *The Marriage of Figaro*; documents about Enlightenment science and pacific exploration; and paintings by Joseph Wright of Derby.

The course is interdisciplinary and there is much emphasis on the connections between the 'texts' studied. It offers guidance in the use of such concepts as 'the Enlightenment', 'Augustan', 'Classic' and 'the Rococo'. The music section offers alternatives, one for students with some technical grounding in music and the other for those with none.

See Section A of How to Apply

Science, technology and everyday life 1870–1950

Course code A282

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course enables you to associate changes in people's lives at home, at work and at leisure with scientific and technological developments at the heart of what has been called the 'second industrial revolution'.

Who is the course for?

The course should appeal to anyone who is interested in studying the social history of science and technology.

Previous knowledge required

You are not expected to have any knowledge of the subject.

Contents

The course explores how and why developments in science and technology came about by considering, for instance, the roles played by government policy, consumer demand, capitalist expansion and ideological debate. The processes of innovation and diffusion are examined within their social context, introducing debates about how far science and technology can be said to have determined historical change. The belief in scientific and technological 'progress' which was widespread at the time is examined critically.

The course looks in particular at Great Britain, the USA and, to some extent, Western Europe. The main text, an anthology of thematic essays, deals with electrification; materials (e.g. plastics, bulk steel); new modes of transport (e.g. electric traction and the internal combustion engine); new modes of communication (e.g. radio, cinema); food production and consumption; health and medicine; and finally, applications of 'scientific method' to human problems.

See Section A of How to Apply

Religion in Victorian Britain

Course code A331

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course introduces central issues in the history of religion in Victorian Britain and enables you to assess the historical evidence used in contemporary scholarly debates. It shows the complexity of religious life and the shallowness of many conventional generalizations on the subject concerning, for example, 'an age of faith' or 'a crisis of faith'. It also shows how the varieties of religious life changed during the Victorian period.

Who is the course for?

This course should appeal to those who have a particular interest in historical or nineteenth-century studies, as well as in religious studies.

Previous knowledge required

It is not necessary to have taken any other courses before this one, but you will need the kind of skills that undergraduate students would get from the arts or social sciences foundation course. It would be helpful to have studied A204 *The Enlightenment* (or A203 *Seventeenth-century England: a changing culture 1618–1689*, no longer available) before this course.

Contents

The course consists of four books: two volumes of essays written by the course team, one reader of primary sources and one reader of secondary sources. There are also four study guides to help you through the course material, identify central questions and set exercises. A detailed glossary gives you essential background information.

See Section A of How to Apply

Liberation and reconstruction: politics, culture and society in France and Italy 1943–54

Course code A324

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio and video cassettes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course is for people who are interested in the history, politics, art, film and culture of France and Italy in the period. If you have impaired sight or hearing you should bear in mind that it will be necessary to use video and audio cassettes.

Previous knowledge required

While you are not expected to have any special knowledge of the subject, it would be helpful to have had experience of interdisciplinary work in the humanities or in related disciplines.

Contents

Liberation from Nazi occupation and Fascism at the end of World War II was more than a military event: it represented a profound desire for political, social and economic transformation. The course examines the objectives of those involved in the resistance to Nazism and Fascism and how far they were realized in the post-war decade. As well as the politics and economics of the period, the course takes an interdisciplinary view of the work of writers, artists and film-makers and considers broad themes including the role of the Roman Catholic Church and American influence. The texts studied in detail (in English translation) include Italo Calvino's *Adam, One Afternoon*, Cesare Pavese's *The Moon and the Bonfires*, Jean-Paul Sartre's *Crime passionnel*, Albert Camus' *The Rebel*, Vittorio De Sica's film *Umberto D* and paintings by Pablo Picasso, Boris Tassitsky and other artists.

See Section A of How to Apply

ART HISTORY

Looking into paintings

Study pack code PA786S

Fee £34.95 (inc. £2.81 VAT)

Subject knowledge required

None

The pack includes

Study text 20 art postcards
Audio and video cassettes

Discount scheme available – see page 89

This pack is designed to extend your interest in visiting galleries and to help you look at paintings with increased understanding. The main types of painting – narrative, portrait, landscape and still life – are discussed in relation to their historical and social contexts. Expert commentators speaking on three audio cassettes enable you to extend your understanding to a further range of examples. This new edition of the pack includes six TV programmes on video cassette by arrangement with Channel Four Television.

Because of copyright restrictions this pack is available only to individual purchasers.

See Section B of How to Apply

Art in fifteenth-century Italy

Course code A353

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassette
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course is for all those who have an interest in art and wish to deepen their understanding and to put works seen in reproduction or in galleries into an historical context.

Previous knowledge required

You are not expected to have any knowledge of art history but it would be an advantage to have some acquaintance with original works of art from visits to galleries or stately homes. You should be prepared for study at third level.

Contents

The course selects objects and themes for study which will introduce the salient characteristics of the art of the period and allow you to practise and test the methods and debates of art history. You will gain an insight into the circumstances in which works of art are produced (artists' training, varieties of patronage), and learn how to evaluate content and function, as well as how to analyse the formal properties of works of art.

We begin with an introduction and three case studies on sculpture, painting and architecture. Then we concentrate on the New Style in Tuscan and Florentine art, its theoretical codification in Alberti's *On Painting* and its reception and propagation by Florentine artists. There is also a discussion of Florentine artistic patronage and works by Masaccio, Brunelleschi, Donatello and Ghiberti. Next we look at three peripatetic artists, assessing the conflicting roles in their work of artistic autonomy and local expectations, and the competing attractions of the International Gothic Style and the Tuscan New Style. There is also a study of architecture in Northern Italy. Finally we look at a significant art form of the Renaissance, the altarpiece, and a case study of two fresco cycles on historical and mythological themes. The course ends with revision, using new case studies to shed light on questions raised throughout the course.

See Section A of How to Apply

Modern art and Modernism: Manet to Pollock

Course code A315

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books TV and radio
programmes Residential school
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Possibly available for the last time in 1992

Who is the course for?

This course will be useful for people who are interested in art history generally, in modern art, or in the history and culture of the period covered. It is *not* a course in 'art appreciation'. Your study will include

analysing works of art and associated critical and historical texts and relating both to the historical conditions in which they were produced and have been interpreted.

Previous knowledge required

You are not expected to have any previous knowledge of art history, but you should be prepared for study at third level.

Contents

By 'Modernism' we mean a particular set of ideas and beliefs about modern art which have become dominant in this century and which are critically examined throughout the course. Our aim is to enable you to demonstrate your understanding of 'Modernism', and to use historical and critical analyses current in the history of art of other periods to assess alternative explanations and interpretations of modern art.

The course begins with a two-week introduction of themes and issues to do with the study of modern art and Modernism. Each subsequent section of the course is centred on a case study of a body of works of art in their historical context. The case studies are preceded by discussions of broader artistic topics (e.g. concepts of realism and abstraction; changes in artistic status and patronage; the reception of art works – their 'public function'), and followed by a review of the critical history of the works concerned. There are sections on Manet and Modernism; Impressionism and Degas; Gauguin and Post-Impressionism; two exhibitions – the Fauves 1905 and *die Brücke* 1906; Cubism – Picasso and Braque; Italian Futurism; Abstraction and Kandinsky; Russian art and the Revolution; George Grosz and Weimar Germany; Léger; Surrealism; English art and Modernism; Abstract Expressionism and Jackson Pollock.

See Section A of How to Apply

HISTORY

Topics in the history of mathematics

Course code MA290

Details of this course are on page 39.

Themes in British and American history: a comparative approach c1760–1970

Course code A317

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Course reader Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course will appeal to anyone who wants an understanding of modern Britain and the modern United States or is interested in how societies evolve under various pressures and in response to different ideas and ideologies.

Previous knowledge required

We recommend that you should have done one second-level course in arts or social science before tackling this course. It would be unwise for anyone who has no experience of academic work beyond school level to attempt it, and this experience should preferably be in either history or a social science discipline such as politics or sociology.

Contents

The course explores developments in the history of Britain and the United States over the period c.1760–1970. Rather than simply narrating past events in the two countries in parallel, it sets out to compare the effects of similar phenomena on two different societies which, arguably, share common roots. The course has three organizing themes: what did industrialization mean for Britain and America? What did democracy and constitutionalism mean for Britain and America? How have social differences, based on class, race and sex, developed

in Britain and America? These themes are studied by means of eight 'focus points':

Democracy in Britain and America (1750–1870)

Conditions of industrialization (1750–1860)

Expansion (1763–1914)

Economic development in Britain and America (1860–1970)

Citizenship, equality and industrialization (1830–1890)

Cities and the social order (1850–1970)

Class and class conflict

The state and social reform (1890–1970)

See Section A of How to Apply

War, peace and social change: Europe 1900–1955

Course code A318

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Course reader Set book Audio and video cassettes Residential school
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course discusses, within an analytical framework, the relationship between total war and social change. There is a strong emphasis on social and cultural history and the causes and consequences of the two world wars, evaluating structural forces in compari-

son with the forces of politics, ideology and contingency. The course considers why a particular society is not the same at one time as at another, and it examines the nature of historiographical controversy.

Who is the course for?

This course will be of interest to students from arts or social science backgrounds who wish to study Europe in the twentieth century in more detail and to advance their insight into historical methods.

Previous knowledge required

We recommend that you should have done one second-level course in arts or social sciences before tackling this course. It would be unwise for anyone who has no experience of academic work beyond school level to attempt it, and your experience should preferably be in either history or a social science discipline such as politics or sociology.

Contents

The following topics are covered:

European armies, governments and societies in 1914
Industrialized and 'Ancien régime' societies
Structures and ideas
Processes of change
The nature of World War I
The effects and consequences of World War I
Russian and German revolutions
Social developments in western democracies
Single party dictatorships
Mass society
Origins of World War II
The nature of World War II
The effects and consequences of World War II
The division of Europe
Processes of change

See Section A of How to Apply



Cartoon from the German satirical magazine *Simplicissimus*, 16 April 1918 (Bildarchiv Preussischer Kulturbesitz, Berlin)

LITERATURE

W. B. Yeats

Study pack code PA710

Fee £10 (inc £0.17 VAT)

Subject knowledge required

None

The pack includes

Study text Audio cassette and notes

Discount scheme available – see page 89

This pack gives an introduction to Yeats' life and his poetic development. Beginning with a close study of individual poems and gradually extending to more general issues, the pack will give you confidence in reading and responding to Yeats' writing, as well as developing your skills in analysing complex poetry. Two of Yeats' most important collections, *The Wind among the Reeds* and *The Tower*, are looked at in detail. You will need a copy of Yeats' *Poems* (Macmillan paperback).

See Section B of How to Apply

James Joyce

Study pack code PA711

Fee £10 (inc. £0.17 VAT)

Subject knowledge required

None

The pack includes

Study text Audio cassette and notes

Discount scheme available – see page 89

A clear introduction to the range of Joyce's work, from the relatively traditional short stories in *Dubliners* to *Portrait of the Artist as a Young Man* – which is the most accessible of Joyce's major writings and is studied in its entirety – to a brief introduction to *Ulysses*. The audio cassette contains readings of Joyce's work as well as a short archive recording of Joyce himself. All the texts you will need are included in *The Essential Joyce* edited by Harry Levin (Panther paperback).

See Section B of How to Apply

Women, writing and culture

Study pack code PU712

Fee £14.95 (inc. £0.25 VAT)

Subject knowledge required:

None

The pack includes

Study texts Novel Short story
Sample magazine Audio cassette

Discount scheme available – see page 89

Women's writing and writing for women have never known such a rapid period of growth as in the post-war years. Women's magazines have developed into the largest section of the magazine market; women's fiction is now one of publishing's main growth areas; and women's studies has become one of the most rapidly growing areas of interest. This pack enables you to examine these developments, their implications and the forces that have helped them to evolve; and is also invaluable for anyone working in literary or cultural studies.

See Section B of How to Apply

Shakespeare

Course code A361

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes TV and radio programmes Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

The course will be of interest to anyone who enjoys the theatre or drama, who enjoys literature or who is studying Elizabethan and Jacobean England.

Previous knowledge required

You need no knowledge of Shakespeare nor of other literature of the period. But because the course is at third level you will find it an advantage to have studied some literature in a formal manner.

Contents

This course studies eight of Shakespeare's plays: *Henry IV Parts 1 and 2*, *Antony and Cleopatra*, *Twelfth Night*, *Measure for Measure*, *Hamlet*, *King Lear* and *The Tempest*. *Antony and Cleopatra* and *King Lear* are studied in considerably more detail than the rest. Among

the topics discussed are staging in Shakespeare's time and our own; the social and cultural conditions which helped to shape Shakespeare's art; and the relevance of the plays for a modern audience or reader. The course pays particular attention to Shakespeare's language and helps you to cope with the problems that the language and the poetic and dramatic conventions of four hundred years ago inevitably present. Television 'workshops' show how directors and actors work on a text in rehearsal, and include demonstrations of stage conditions in Shakespeare's own theatres. Audio cassettes present scholars of international reputation speaking on topics such as Shakespeare's life; what he read; how the actors were organized; why the plays have to be edited; and the importance of music and staging. There are also radio programmes linked to the plays and cassettes containing specially recorded extracts.

See Section A of How to Apply

Literature in the modern world

Course code A319

Fee £425

Full credit Third level

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books TV and radio programmes Audio cassettes Residential school Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course should appeal to those who enjoy studying novels, poetry and plays. It introduces the main concepts and procedures required by the study of literature. Texts are examined in relation to aspects of the cultural change in this century through which the subject of 'English literature' has become 'literature in English'. You will develop an awareness of the relationship of literary texts to their cultural context and the relevance of literary study in the modern world.

Previous knowledge required

There are no formal requirements, but some preliminary experience of the study of literature would be helpful, such as an arts foundation course and A204 *The Enlightenment*, A205 *Culture and belief in Europe 1450–1600* or A203 *Seventeenth-century England: a changing culture 1618–1689* (no longer available).

Contents

The course is in eight sections. *Introduction* illustrates the main themes of the course with reference to examples of the three genres (prose fiction, poetry and drama) and essays on approaches to the study of them, and gives you initial practice in the formal analysis of such texts.

The impact of Modernism surveys and illustrates the main features of Modernist writing in English and related theoretical questions about literary language and narrative structure.

'Englishness' shows how inherited definitions of 'Englishness' were challenged from about 1930 by cultural influences (Modernism) and political events, domestic and European.

Literature and ideology surveys definitions of 'ideology' and illustrates the working of 'ideology' in literary and dramatic texts and the view that 'literature' as a concept is ideological.

End of empire considers the effects of the end of empire on some British writers and discusses related theoretical problems (cultural contexts, the influence of 'history' on 'literature').

New writings in English illustrates the range of writing in English from countries formerly in the British Empire and discusses their role in redefining 'English literature'.

Language and gender considers gender stereotyping in literary texts, the influence of 'patriarchal ideology' on women writers and the claims for a feminist écriture.

'Literature' and 'history' considers the relationship between literary or dramatic texts and historical events, and whether such texts offer special insights into the events.

See Section A of How to Apply

MA in Literature

There is an MA in Literature which may be of interest to you. The next application period opens in March 1992 for study in 1993. If you would like more information please ring the Central Enquiry Service (0908 653231) and ask for the *Taught Master's Degree Prospectus*.

MUSIC

Principles of orchestration

Study pack code PA702

Fee £10 (inc. £0.17 VAT)

Subject knowledge required

Some

The pack includes

Study text Book of scores Wall chart
Audio cassette

Discount scheme available – see page 89

This study pack is designed not to teach you how to orchestrate, but rather to help you understand the principles which composers use when they write for orchestra and to further your own understanding and enjoyment of orchestral music of the tonal period. After a brief historical introduction, the pack deals in detail with texture and spacing, string bowing, orchestration of four-part texture, common melodic doublings and accompaniment textures.

Only a small stock of this pack remains

See Section B of How to Apply

The rise of jazz

Study pack code PA703

Fee £17.50 (inc. £0.30 VAT)

Subject knowledge required

Some

The pack includes

Study text Book of scores
Record and audio cassette

Discount scheme available – see page 89

Featuring performances by King Oliver, Louis Armstrong, Bessie Smith, Duke Ellington and others, this pack describes the origins and creation of jazz and its establishment as a major twentieth-century musical genre and studies representative examples of the best jazz of the period up to the 1930s. It relates the rise of jazz to its social and cultural background, and to 'classical' music, and should be of special interest to jazz enthusiasts with some knowledge of classical music, to music students and to professional musicians.

Only a small stock of this pack remains

See Section B of How to Apply

The rise of the symphony

Study pack code PA704

Fee £12.50 (inc. £0.21 VAT)

Subject knowledge required

Some

The pack includes

Study text 2 books of scores Audio cassette

Discount scheme available – see page 89

Many people who are familiar with the classical symphonies of Haydn and Mozart, Beethoven and Schubert know little about how the symphony began. This pack enables you to study its development from the first half of the eighteenth century to its established form in the second half of the century. It examines the conditions from which the early symphony emerged, and takes you through six examples of the ways in which the new style was fostered by Sammartini, Wagenseil, Stamitz, C. P. E. Bach, J. C. Bach and Rosetti.

Only a small stock of this pack remains

See Section B of How to Apply

Elements of music

Course code A241

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV programmes Records Home kit*
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course provides a thorough grounding in the elements of music, developing aural perception, teaching score-reading and giving you the technical knowledge you need to practise harmonic and stylistic analysis of music in the period between about 1730 and 1900.

Who is the course for?

The course will interest those with some musical background and those with a love of music but no knowledge of its technical aspects. If you are an absolute beginner you may find the course demanding and you should consult your Regional Enquiry Service before committing yourself to it.

The course is not suitable if you have impaired hearing. If you have impaired sight you will need the help of an amanuensis and must have a good ear.

Previous knowledge required

You are not expected to have any special knowledge.

Contents

The course begins with the rudiments of music and has exercises in score-reading and aural training. The core of the course concentrates on harmony and style. You work exercises of an elementary nature – phrases in major and minor keys, modulation, simple harmonizations and so on – and learn to do harmonic and stylistic analysis by discussion of more advanced harmony, texture and style. The later part of the course is more analytical. Form is dealt with in a refreshing and unpedantic way and the last section is devoted to a brief study of orchestration. Learning to play the recorder is part of the course; you should not buy one until you have read the Course Guide.

* The home kit, a small electric reed organ, is optional. You will not need it if you can have daily use of an instrument which is in good condition and *in tune*, has a range of at least 2.5 octaves and is capable of playing chords, e.g. piano, electric or pipe organ, harpsichord, harmonium (but *not* melodica or piano-accordion). The kit may not be taken or sent outside the UK.

See Section A of How to Apply

Beethoven

Course code A341

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

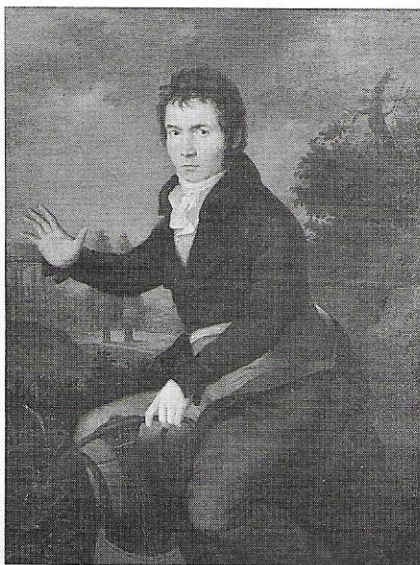
Course certificate

Could count towards a BA degree

To many, Beethoven's name is virtually synonymous with Western 'art' music. From the Royal Festival Hall to TV commercials, his music continues to take a significant place in our musical life. This course introduces several of the central issues, aesthetic, historical, political and social, that are involved when discussing Beethoven's music. It attempts to evaluate how his music reflects its time, as well as to identify the changing development of its style and to assess its historical significance and influence.

Who is the course for?

This course will interest people who enjoy listening to Beethoven's music



Beethoven, c.1804, by J. W. Mähler (Museen der Stadt Wien)

and want to enrich their knowledge through a detailed investigation of the composer's music and the period in which he lived.

Previous knowledge required

The level of the discussion is by no means elementary. You are expected to have an understanding of the nature of traditional harmony and tonality and to be able to follow scores, including orchestral ones. An introductory cassette will help you tackle the analyses in the course, but assumes that you have already done some analytical work of a modest nature.

Contents

The course is in four main sections, each concentrating on a particular theme. *Beethoven the performer* examines Beethoven's early development as both performer and composer. *Beethoven: Classical and Romantic* explores the two main stylistic determinants of his style. In *Beethoven: the brotherhood of man* the influences of political events on Beethoven's thinking are assessed. Finally, in the fourth section, the changing role of the composer, from master craftsman to genius and visionary, is considered. Each section is illustrated by detailed analysis and discussion of case studies.

See Section A of How to Apply

From Baroque to Romantic: studies in tonal music

Course code A314

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
Records Residential school Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course will be of interest to people who have mastered basic musical skills and would like to study the history of Western art music. It covers the period 1600–1900 and examines the major-minor tonal system from its emergence in the Baroque era to its questionable dissolution in the late nineteenth and early twentieth centuries.

Previous knowledge required

The course assumes that you are familiar with the rudiments of music, have a reasonable understanding of traditional harmony and can follow a score. You will need to be able both to understand musical analysis when it is presented by other people and, at a simpler level, to do it yourself.

Contents

The course falls into three main sections – Baroque, Classical and Romantic – and includes both general surveys of musical developments in a particular period and detailed case studies of works by individual composers such as Bach (a cello suite, a Brandenburg concerto), Handel (*Acis and Galatea*, a concerto grosso), Haydn (string quartets), Mozart (a piano concerto), Beethoven (*Eroica* Symphony), Schubert ('Unfinished' Symphony, selected songs), Schumann (songs, solo piano pieces), Berlioz (*Queen Mab* Scherzo), Mendelssohn (*Italian* Symphony), Chopin (Preludes for piano), Liszt (piano, symphonic poem), Wagner (*Götterdämmerung*), Brahms (piano, song, Fourth Symphony), Verdi (*Aida*), Tchaikovsky (string quartet, Sixth Symphony) and Glinka and Borodin (symphonic poems).

See Section A of How to Apply

PHILOSOPHY

Philosophy of the arts

Course code AA301

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course is for anyone who is interested in philosophical problems about the 'creative arts', such as music, painting, poetry and drama.

Previous knowledge required

Though we expect the course to appeal especially to people with an interest in the arts, no special knowledge or expertise in the arts is required. A knowledge of philosophy would be useful, but the course is designed to be suitable for students without such knowledge.

Contents

What is art? Is it possible to define art? If not, are there no limits to what may count as a work of art? Some recent 'outrageous' examples of art are considered. This is followed by an examination of beauty and other 'aesthetic qualities'. Finally, we deal with philosophical problems about authenticity and the evaluation of imitations and forgeries.

Art and feeling Some thinkers have defined art in terms of a special 'aesthetic experience' or attitude on the part of the listener, viewer or reader. Can such an experience or attitude be defined? According to another theory, art is essentially an expression of feeling on the part of the creator, while music has been regarded as a kind of 'language of the emotions'. To what extent, if at all, are such theories tenable?

Art, truth and society Does art 'imitate nature'? How would this apply to the different arts? Can we appeal to an 'innocent eye' to set the standard for visual arts? Can literature provide insights into the human condition? Are sex and violence on television justified if 'that's how things really are'? We also deal with the role of art in society: the justification, if any, for subsidizing some arts while forbidding others, such

as pornography; and the question of censorship.

Interpretation and evaluation Are there any general criteria for evaluating works of art? If not, is this purely a matter of taste, beyond the scope of reason? Should a work of art be interpreted just by what is there in the work? Or is it up to the author to decide what the work means? The final sections deal with continental aesthetics: Marxism, structuralism and post-structuralism, bringing out differences between French and Anglo-American approaches.

See Section A of How to Apply

Life and death

Course code A310

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

The course shows how problems of life and death – from capital punishment to abortion – can be brought under systematic philosophical accounts of the difference between right and wrong, good and evil, justice and injustice, and suggests some ways of deciding between such accounts when they conflict.

Who is the course for?

As well as its appeal to those who have an academic interest in moral philosophy, the course will be of practical value to people whose work in such areas as health care, policing and social work involves them in the consideration of life and death problems.

Previous knowledge required

You are not expected to have a previous knowledge of philosophy. While many of the issues will be familiar, the course structure allows for a gradual acquisition of the special philosophical skills you need.

Contents

The course material is presented in four books. *Moral Theory and Capital Punishment* acquaints you with rival moral theories – Kantian and utilitarian – by way of a study of capital punishment. *Ending Lives* widens the range of moral problems to include suicide and euthanasia and indicates the need for

metaphysical theses in dealing with them. *Beginning Lives* concentrates on the ethics of abortion and deals with related issues such as surrogacy and foetal research. *The Quest for Meaning* offers a survey of different philosophical answers to the question that in one way or another runs through the whole course: what makes life or a life worth living, valuable or meaningful?

See Section A of How to Apply

REGIONAL STUDIES

Open London

Study pack code PA732

Fee £14.95 (inc. £0.25 VAT)

Subject knowledge required

None

The pack includes

3 books and other leaflets Set of 20 walks and rides Map Audio cassette

Discount scheme available – see page 89

This pack, a revealing exploration of London's history and culture, helps you to investigate the capital's rich and varied past. Specially written essays cover such topics as London at war, London pubs, literary London and Roman London. To add to your enjoyment there is also a set of illustrated leaflets devoted to walks around the City and Westminster, a river trip on the Thames and a ride on London's underground system. All feature interesting little-known places as well as famous sites.



The pack includes an audio cassette of interviews with Londoners, a comprehensive London map and a guide to *Entertaining London*.

See Section B of How to Apply

Scottish studies

Study pack code PA734

Fee £10

Subject knowledge required

None

The pack includes

Study guides

Discount scheme available – see page 89

This pack of three study guides offers an introduction to Scottish history, literature and culture through a series of studies of important historical developments between 1560 and 1980 and works of literature since the mediaeval period.

The guides refer to a wide range of reading. You will need Muir *Scott and Scotland* (Polygon), Donaldson and Morpeth *Dictionary of Scottish History* (Donald), Smout *A History of the Scottish People* (Collins/Fontana), Donaldson *Scotland: James V to James VII*, Ferguson *Scotland: 1689 to the Present* (both Oliver and Boyd).

See Section B of How to Apply

East Anglian studies: nineteenth century

Study pack code PA730

Fee £12.50 (inc. £0.21 VAT)

Subject knowledge required

None

The pack includes

Study texts Time chart Church plans booklet
12 art postcards Audio cassette and notes

Discount scheme available – see page 89

This pack is the perfect way of getting right to the heart of East Anglia and its development during the nineteenth century. Topics include the development of industry, the growth of communications, urbanization and townscapes. The work of the Norwich school of painters is featured along with East Anglian writers and church architecture. The wealth of material includes an audio cassette recounting the history of the local fishing industry and its importance to the economy of the area.

The pack can be purchased by personal callers at the East Anglia Regional Centre (see page 90), or see Section B of How to Apply

RELIGION

Introduction to Hinduism

Study pack code PA720

Fee £12.50 (inc. £0.21 VAT)

Subject knowledge required

None

The pack includes

Study texts Audio cassettes

Discount scheme available – see page 89

Much of today's awareness of Hinduism stems from the life and works of Mahatma Gandhi. But how much of Gandhi's philosophy was derived from his own ideas and personality rather than from the principles of Hinduism itself? This, and the part played by another modern radical, Aurobindo, is discussed fully along with classical Hindu thought and early scripture. Also covered is the influence of Hinduism on everyday village life, caste structure, religious customs and festivals. The audio cassette considers the importance of the Hindu temple and its relationship with Hindu daily life and religion.

See Section B of How to Apply

Introduction to Buddhism

Study pack code PA721

Fee £10 (inc. £0.17 VAT)

Subject knowledge required

None

The pack includes

Study texts Audio cassettes

Discount scheme available – see page 89

Buddhism is an important eastern religion with a growing influence in the West. With its unfamiliar yet fascinating ideas, and with the establishment of an increasing number of Buddhist communities in Britain, it's a religion that repays further investigation. The pack contains extensive information about the teaching of the Buddha and the development of Buddhist thought and practice throughout the East, including Zen Buddhism.

See Section B of How to Apply

The religious quest

Course code A228

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Possibly available for the last time in 1992

This course is an introduction to the study of Hinduism, Buddhism, Sikhism, Judaism, Christianity and Islam.

Who is the course for?

The course is suitable for anyone who is interested in the growing awareness of the many religions in Britain. In particular it is suitable for teachers of religious education, clergymen and women, social workers and workers in occupations dealing with ethnic minorities.

Previous knowledge required

You are not expected to have any knowledge of religious study, and no special preparation is necessary.

Contents

The course examines the beliefs and practices of each religion, using various methods including the theological, philosophical, phenomenological, historical and sociological. It does not assume the validity of any particular religious belief. In each religion you will be taken from little or no knowledge to a fairly deep level of understanding. Most of the religions have significant numbers of adherents in Britain and you are encouraged to acquaint yourself with local communities wherever possible and study the living religions. The cassettes and TV programmes are designed with a similar end in mind, giving access to these religions in their countries of origin.

Places on this course are limited, so an early application is advisable.

See Section A of How to Apply

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

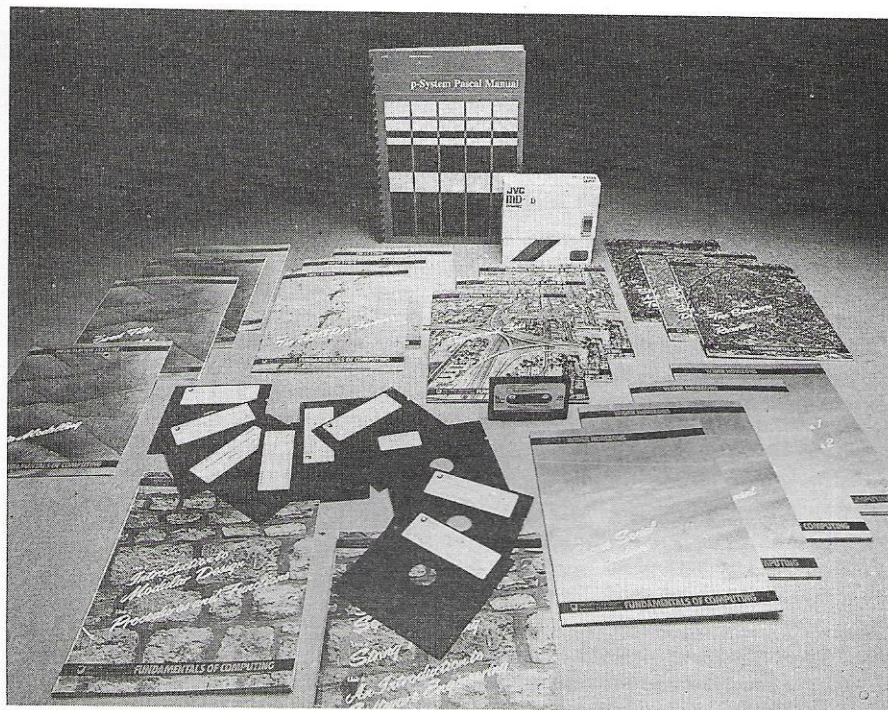
The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

COMPUTING



CONTENTS

General	20
A practical introduction to computing using MS-DOS and Framework®	
Microprocessor-based computers	
Fundamentals of computing	
Mathematics in computing	
Programming	21
Introduction to commercial data processing with Cobol	
Structured programming with UCSD Pascal	
Programming and programming languages	
Information systems	22
Data analysis for information system design	
Introduction to systems analysis and design	
Information systems and IT for managers	
Data models and databases	
Artificial intelligence	23
Intensive Prolog	
Common Lisp for knowledge engineering	
Knowledge engineering	
Software engineering	24
What is software engineering?	
Approaches to software project management	
An introduction to formal methods of software development	
Topics in software engineering	

GENERAL

A practical introduction to computing using MS-DOS and Framework®

Study pack code RT520
Fee £69.95 (inc. £5.62 VAT)
Subject knowledge required
 None

The pack includes

Study texts Audio cassettes
 Framework® software Example discs

Discount scheme available – see page 89

This pack is an introduction to using an MS-DOS computer. First of all you will get a simple understanding of how a computer works. Experts speaking on three audio cassettes guide you through practical activities, and two helpful teaching manuals lead you step by step through a series of tasks. You will learn how to use the MS-DOS operating system and also how to use a word-processor, a spreadsheet and a database. These are some of the functions built into Framework®, a powerful integrated software package included in the pack. If you need help, you can telephone the Open University Computer Helpline.

The pack will enable you to:

- Understand and use an MS-DOS computer.
 - Handle, copy, delete and rename files.
 - Install and run your Framework® application package.
 - Use a word-processor.
 - Create and use spreadsheets for accounting and other calculations.
 - Develop and use databases.
- (Framework® is a registered trademark of Ashton-Tate)

To use the pack you will need an IBM-compatible microcomputer with at least 512 RAM, either a hard disk and single disk drive or a twin floppy disk drive, MS-DOS version 2.1 or higher, a monitor and a printer.

* Please specify which version of the pack you want by putting the appropriate code on your order form:

RT520HD3	3 1/2-inch/Hard disk version
RT520HD5	5 1/4-inch/Hard disk version
RT520FD3	3 1/2-inch/Twin floppy disk drive version
RT520FD5	5 1/4-inch/Twin floppy disk drive version

See Section B of How to Apply

Microprocessor-based computers

Course code T223

Details of this course are on page 76.

Fundamentals of computing

Course code M205

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes.
 TV programmes Computing Personal tutor
 Assignments and exam

You will need

Home computer

Certification

Course certificate
 Could count towards a BA degree
 Home computing course – see page 4

Who is the course for?

This is a general course in computing. It will be of interest to people whose jobs require them to have more than a passing knowledge of the use of computers. This would include those already working with computers who wish to formalize or broaden their knowledge. It is also intended for those who want to pursue the subject at a higher level by taking third-level computing courses, and is strongly recommended as preparation for these. It is not suitable for someone who just wants to learn how to program a micro using Basic or to acquire only a superficial knowledge of computers.

Previous knowledge required

You are not expected to have any previous knowledge of computing.

Contents

The course presents a rigorous approach to the development of computer programs using a structured top-down technique. You will be expected to develop and implement program designs using the structured language Pascal. The practical work is extensive and requires access to a home computer.

The course also includes an introduction to software engineering, operating systems, information systems and the social implications of computing.

See Section A of How to Apply

Mathematics in computing

Course code M261

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes Personal tutor
 Assignments and exam

Certification

Course certificate
 Could count towards a BA degree

Who is the course for?

This course introduces the use of mathematics and formalism to computer scientists. It should also be of interest to anyone who has a general interest in mathematics.

Previous knowledge required

The course is not suitable for the mathematically naive. A-level maths, or the equivalent, is required, and some acquaintance with computing is advisable.

Contents

The course introduces mathematical topics relevant to a formal approach to computing, including sets, functions and relations, logic recursion and proof. Interwoven with these is a discussion of their application to computing. But the course is *not* an introduction to computing or a formal approach to it. The computing topics illustrate and prompt the mathematics; they are treated systematically but give only a partial and selective view of computing.

Mathematics is seen as relevant to computing in two related ways. First, it can provide a suitable language for a first formal description of a real situation which is to be 'put on a computer'. Second, the mathematical idea of *function* is used to describe computations. The course discusses algorithms to evaluate functions using a Pascal-like pseudocode, and also the development of certain algorithms using only constructs relating to functions.

The course does *not* contain any practical programming; the realization of algorithms in a particular programming language is *not* discussed.

The presentation of mathematics topics is not particularly formal in the sense of 'pure mathematics', but the course does use mathematical symbolism freely and is designed to help you to read material presented symbolically.

See Section A of How to Apply

PROGRAMMING

Introduction to commercial data processing with Cobol

Study pack code PM682

Fee £25

About 100 hours of study

Subject knowledge required

None

The pack includes

Study texts Activity booklet
Video cassettes on loan

This pack is now a little dated and is offered at a reduced price (originally £65.00) while stocks last.

With the increasing use of computers in commerce, industry, public services and schools, many people have become interested in the methods and techniques used in computing. Organizations have a growing need for people with design and programming skills.

Who is the pack for?

- Organizations which need to train new programmers.
- Managers who need insight into commercial programming methods and practice.
- Managers of small businesses who need an awareness of design methods so that they can deal with software suppliers.
- Teachers of sixth-form computing courses.
- People contemplating a career in commercial data processing.

A simple understanding of computers would be helpful but is not necessary.

Contents

The pack explains:

- A computer-based problem-solving strategy.
- A design technique for stating and refining problems.
- Translation of a design into a Cobol program.
- Techniques for verifying, implementing and testing a program.
- General practices in commercial data processing.
- How to choose the appropriate technique.

Each section of text gives examples, discussion, exercises and solutions, followed by self-assessment questions and solutions to check your skill.

To make full use of the pack you will need the use of a computer that can be programmed in Cobol. This is not provided by the University.

See Section B of How to Apply

Structured programming with UCSD Pascal

Study pack code PM683

Fee £25

About 50 hours of study

Subject knowledge required

Some

The pack includes

Study and reference texts Activity booklet

This pack is now a little dated and is offered at a reduced price (originally £70) while stocks last.

UCSD Pascal is a widely used structured programming language. It supports the data structures and control structures needed to implement top-down design, which is the method used in this pack.

Who is the pack for?

- Organizations which need to train programmers in structured methods.
- Engineers who want to use Pascal in real-time monitoring or control applications.
- Microcomputer users who wish to use a better language.
- Teachers and further education lecturers on computing courses.
- Students who intend to take the Computing for Commerce and Industry courses and need an introduction to structured programming.

Contents

The pack explains:

- A computer-based problem-solving strategy.
- A design technique for stating and refining problems.
- Translation of a design into a Pascal program.
- Techniques for verifying, implementing and testing a program.

Each section of text gives examples, discussion, exercises and solutions, followed by self-assessment questions and solutions to check your skill.

Note Although the material is based on UCSD Pascal version IV, most of it can be used with any version of the language. The UCSD Pascal handbook, formerly part of the pack material, is no longer available.

See Section B of How to Apply

Programming and programming languages

Course code M353

Half credit Third level

Fee £275

Study period

Feb-Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes
Computer software Personal tutor
Assignments and exam

You will need

Home computer

Certification

Course certificate

Could count towards a BA degree

Home computing course – see page 4

This course should broaden your understanding of the nature of programming and the structure and construction of high-level programming languages. It is *not* a systematic study of particular programming languages or of program construction.

Who is the course for?

The course is intended for those who have already had an introduction to computing and want more insight into the nature of programming. It will be of interest to teachers, programmers and computer analysts.

Previous knowledge required

You should have studied computing to at least the standards of M252 *Computing and computers* and M205 *Fundamentals of computing*. Exercises on the home computer reinforce the main concepts of the course, and you must have a knowledge of the programming language Pascal for these.

Contents

Computer programs are prepared in several stages. One of the most important is the specification which identifies the details of what the software should do. A good way of specifying a piece of software is defining the operations that it will carry out. Such operations can be precisely defined through their syntax and semantics. We explain syntax and semantics and show how such specifications can be implemented as computer programs.

Programming languages are themselves defined by syntax and semantics, and this idea is discussed and put to use by examining how a programming language definition can be turned into a compiler.

Since every high-level programming language offers the programmer a different view of what programming is about, the course considers questions

about the nature of programming. A discussion of virtual machines looks at the model of the computing process supported by Pascal. This is contrasted with the one given by Prolog, a high-level language requiring quite a different style of programming. We also compare concurrent (parallel) programming with sequential programming.

See Section A of How to Apply

INFORMATION SYSTEMS

Data analysis for information system design

Study pack code PM681

Fee £25.43 (inc. £0.43 VAT)

About 45 hours of study

Subject knowledge required

Some

The pack includes

Study texts Audio cassette
Video cassettes on loan

This pack is now a little dated and is offered at a reduced price (originally £50.75) while stocks last.

The increasing use of computers in commerce, industry and public services has led to a growing awareness of the advantages of computer-based information systems. Many people who work in these areas need training to help them analyse their information requirements and create data models for effective database systems.

Who is the pack for?

The pack is intended for people who want a grounding in data analysis; those who wish to analyse, model and manage data; and managers who need to appreciate the problems and techniques of data analysis.

Contents

The topics include:

- How to analyse data structure and develop conceptual models.
- Why and how to normalize data.
- Ways of representing structure models, e.g. as entities, attributes and relationships.
- How to transform between representations.
- How to choose the appropriate technique.

Each section of the text gives examples, discussion, exercises and solutions to help you learn, followed by objectives, self-assessment questions and solutions to check your skill.

See Section B of How to Apply

Introduction to systems analysis and design

Study pack code PM684

Fee £25.43 (inc. £0.43 VAT)

About 40 hours of study

Subject knowledge required

None

The pack includes

Study texts Audio cassettes
Video cassettes on loan

This pack is now a little dated and is offered at a reduced price (originally £50.75) while stocks last.

The pack introduces the wide variety of activities in systems analysis. It surveys the possible approaches and the reasons for choosing and adopting them.

Who is the pack for?

- Managers who want to know something about systems analysis.
- Programmers who need an understanding of tasks involved in systems analysis.
- Data processing personnel.
- Further education establishments that want to use distance-learning materials as a basis for commercial data-processing courses.

Contents

The pack includes the following topics:

- The task of systems analysis in an organization.
- Comparison of the project phase and prototype approaches.
- Planning and practice of interviewing.
- Comparison of the participative and non-participative approaches to system development.
- Measures of effectiveness, costs and benefits.
- Identification of criteria in system decisions.

Each section of text gives examples, discussion, exercises and solutions; much of the teaching is done through case studies.

See Section B of How to Apply

Information systems and IT for managers

Course code P792

This is a course in the Open Business School brochure which may also be of interest to you. If you would like a copy of the brochure (code CDM91), please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

Data models and databases

Course code M357

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Computing Personal tutor
Assignments and exam

You will need

Home computer with two disk drives

Certification

Course certificate

Could count towards a BA degree

Home computing course – see page 4

This advanced computing course presents in detail the main aspects of database technology, including an analysis of the properties of information and its representation by means of data models.

Who is the course for?

If you are interested in information systems and how they are organized for computers, and you want practical experience of some of the concepts of database technology, then this would be an appropriate course. It is suitable for students with disabilities as long as they can study texts and use a home computer.

Previous knowledge required

Some familiarity with computing is desirable. M252 *Computing and computers* (no longer available) or M205 *Fundamentals of computing* provides a suitable introduction.

Contents

The course describes the role of database management in the context of the kinds of information system used by most modern organizations. Aspects of the subject are discussed in terms of the design, creation and use of databases by people with different requirements and responsibilities.

Data models are introduced as a means of capturing the information in an organization's data, and techniques for analysing data and representing it in a data model are considered. We describe in detail the relational data model, both its theoretical properties and its use in a particular type of database management system, based on SQL. Finally we look at some topics to do with the administration and control of database systems and how database technology is evolving.

See Section A of How to Apply

ARTIFICIAL INTELLIGENCE

Intensive Prolog

Study pack code PD622
Fee £100.00 (inc. £8.04 VAT)

Multi-print pack code PD622P

Fee £25

About 80 hours of study

Subject knowledge required
Some

The pack includes

Study texts Video cassette Software
(Multi-print pack includes course text and workbook only)

You will need

Computer that meets the University's specification – see page 4

This pack teaches comprehensive artificial intelligence programming skills and instils a high degree of 'Prolog fluency'.

Who is the pack for?

- Applications programmers who want to go on to explore knowledge engineering or logic programming.
 - Technical or R&D managers who need further understanding of the technology's potential.
 - Students and educators who want to extend their expertise in psychology, computing or artificial intelligence.
- You will need some familiarity with the keyboard, and a rudimentary understanding of the principles of artificial intelligence.

Contents

Course notes: Part I *Essential Prolog*; Part II *The power of Prolog representation*; Part III *An expert system shell*. Course workbook; a companion volume of exercise material. *Prolog Programming for Artificial Intelligence* by Ivan Bratko. Video cassette and notes to help you work the problems set in the video. IBM-PC compatible disk, which includes an expert system shell, Edinburgh-syntax Prolog interpreter and full source code listings.

The multi-print pack is available to anyone who is buying the full pack and wants at least ten extra copies of the text and workbooks.

See Section B of How to Apply

This pack is also available as a course in the Computing for Commerce and Industry programme. If you would like the brochure for this programme please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

Common Lisp for knowledge engineering

Study pack code PD623
Fee £100.00 (inc. £8.04 VAT)

Multi-print pack code PD623P
Fee £25

About 80 hours of study

Subject knowledge required
Some

The pack includes

Study texts Video cassette Software
(Multi-print pack includes course text and workbook only)

You will need

Personal computer

This pack is for those already familiar with Lisp. It includes design and implementation of a complete software environment for knowledge engineering.

Who is the pack for?

- Applications programmers who have some experience of Lisp and want to extend their knowledge into the implementation of expert systems of knowledge engineering tools.
- Technical or R&D managers whose teams have the task of implementing knowledge-based systems.
- Students, researchers and educators who want to learn more about advanced techniques and gain practical experience of knowledge engineering tools.

You need some knowledge of Lisp or functional programming, and programming experience in a language such as Pascal, Fortran or C.

Contents

Course texts: *Knowledge representation: a frame language*; *User interfaces*; *Inference: a production system*; *Inference: an optimized rule interpreter*. Course workbook: a scheduling instruction book. *Common Lisp, the Language* by Guy Steele. Code Files I-IV, accompanying the texts. Video cassette. Software on magnetic media: IBM PC-compatible 5.25-inch floppy disk and Apple Macintosh 3.5-inch floppy disk.

The multi-print pack is available to anyone who is buying the full pack and wants at least ten extra copies of the text and workbooks.

See Section B of How to Apply

Knowledge engineering

Study pack code PD624
Fee £100.00 (inc. £8.04 VAT)

Multi-print pack code PD624P
Fee £25

About 60 hours of study

Subject knowledge required
Some

The course includes

Study texts Video cassettes Software
(Multi-print pack includes course text and *Respiratory Medicine* only)

You will need

Personal computer

This pack gives instruction in practical and conceptual skills for managers and programmers who need to bring themselves up to date with techniques introduced by the application of expert systems technology to industry.

Who is the pack for?

- Programmers who wish to broaden their skills into building expert systems.
- Technical and R&D managers who want further understanding of the possibilities offered by expert systems.
- Students and educators in higher education who want to expand their studies of psychology or computer science in the context of artificial intelligence.

You will need some keyboard skills and a rudimentary knowledge of the principles of expert systems.

Contents

Course text (7 chapters). Course workbook: a scheduling instruction book. *Respiratory Medicine* by P.N. Plowman. Video cassette showing production systems, pattern matching and conflict resolution, knowledge elicitation and a critique of elicitation methods. Software: a micro interpreter for knowledge engineering (MIKE) on IBM-PC compatible disk; includes forward- and backward-chaining production systems and a frame system.

The multi-print pack is available to anyone who is buying the full pack and wants at least ten extra copies of the course text and *Respiratory Medicine*.

See Section B of How to Apply

This pack is also available as a course in the Computing for Commerce and Industry programme. If you would like this brochure please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

SOFTWARE ENGINEERING

What is software engineering?

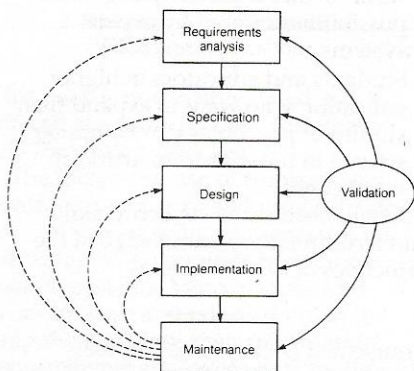
Study pack code PM685
Fee £117.50 (inc. £17.50 VAT)

About 20 hours of study

Subject knowledge required
None

The pack includes
Study texts Video cassette

This pack is an introduction for managers to the software development process. It begins by describing the causes of unreliability in software, and an ideal model of the software development process is introduced. We look in particular at industrial applications of computer monitoring and controlling equipment and processes; the same approach can be applied to other areas.



The software development life-cycle

The video takes you into the real world of computing. Systems Designers Ltd. were contracted by the Ministry of Defence to supply a system to the Meteorological Office and key points in the development of this system are considered, as are the successes and the problems. The video illustrates the technical and theoretical aspects of the business of software development, and also shows how necessary response from the customer is to success.

See Section B of How to Apply

Approaches to software project management

Study pack code PM686
Fee £244.68 (inc. £19.68 VAT)

Training pack code PM686P
Fee £75

About 50 hours of study

Subject knowledge required
Some

The pack includes
Study texts Video cassette
Training pack includes 5 copies of
the study texts only

This pack was produced with the help of funds made available by the Science and Engineering Research Council to increase awareness of current theory and practice in software engineering and encourage more efficient production of software by treating it as an engineering process. The pack has been designed in close co-operation with companies carrying out development work, and case studies are extensively used.

Who is the pack for?

- Senior technical staff and prospective project managers.
- Technical managers of hardware processes.
- Staff in the computing discipline in further and higher education establishments.

Contents

The pack explains:

- The main functions of software project management.
- Use of software metrics.
- The process of developing a project plan.
- Monitoring and control of the progress of a project.
- Validation of a requirements specification and system design.
- Organization and appraisal of quality assurance methods for a software project.

The training pack, which contains five copies of the study texts but no video, is available for companies which have purchased a full study pack and want to use it for training other employees.

See Section B of How to Apply

An introduction to formal methods of software development

Study pack code PM687
Fee £190.31 (inc. £15.31 VAT)

Training pack code PM687P
Fee £75

About 50 hours of study

Subject knowledge required
Some

The pack includes
Study texts Video cassettes
Training pack includes 5 copies of
the study texts only

This pack was produced with the help of funds made available by the Science and Engineering Research Council to increase awareness of current theory and practice in software engineering and encourage more efficient production of software by treating it as an engineering process. The pack demonstrates VDM, a formal method of systematic specification, design and validation of complex software systems.

Who is the pack for?

- Staff in industry who deal with complex software projects; the pack gives them the necessary mathematical knowledge to use the power of the method in their work.
- Researchers in the computing discipline.

Contents

The pack explains:

- Formal specification of a system, using implicit specification and data abstraction.
- Data reification of a simple specification.
- The concept of proof of program correctness.

The pack will enable you to analyse and change your approach to programming and adopt a more systematic method. There are self-assessment questions and the interactive video elaborates on the concepts introduced.

The training pack, which contains five copies of the study texts but no video, is available for companies which have purchased a full study pack and want to use it for training other employees.

See Section B of How to Apply

Topics in software engineering

Course code M355

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Developing a software system is one of the most complex tasks that people carry out. Software projects are often delivered late, exceed their budgets and fail to meet the customer's requirements. This course shows how some of the problems can be solved by treating software development as an engineering process.

Who is the course for?

This course is for students of computer science, or people involved in aspects of software development, both managerial and technical.

Previous knowledge required

You should be familiar with the software project life-cycle and have some experience of structured programming. You also need a basic knowledge of set theory and logic (M261 *Mathematics in computing* would give you this).

Contents

The course consists of four blocks of work. *Block 1* introduces software engineering and the software project life-cycle and describes the Yourdon Structured Method for software development, including data flow and state transition diagrams.

Block 2 explains VDM (Vienna Development Methodology), a formal software development method suited to the production of data-oriented systems, in which the analyst and designer specify the structure of stored data and the operations on it, using discrete mathematics and employing mathematical proof as a validation technique.

Block 3 describes a technique for developing software for concurrent systems: the kinds of system found in real-time applications such as avionics and process control. The technique is based on the specification notation CSP and the programming language Occam.



Block 4 examines how software projects are managed, describing in particular the techniques required to plan, monitor and control the software development process.

See Section A of *How to Apply*

TRAINING COURSES IN COMPUTING AND MANUFACTURING

More than 6,000 employees from over 1,200 organizations have used the postgraduate-level courses from the Open University's Computing for Commerce and Industry (CCI) and Manufacturing: Management and Technology (MMT) programmes to bring up to date their skills and knowledge in areas relevant to the success of their business, without being away from home or work for extended periods.

Each course is a six-month structured study period leading to a course certificate. The course certificates can be combined to make up a diploma, which can be converted to an MSc degree by successful completion of a project.

The University can offer in-company tutorial support to companies using the courses, perhaps as part of a staff development or other training scheme.

The courses available at present are:

Computing for Commerce and Industry (CCI)

Software engineering (M860)
Computer architectures and operating systems (PMT601)
Real-time monitoring (PMT602)
Real-time control (PMT604)
Project management (PMT605)
Human-computer interaction (PMT607)
Computer-aided engineering (PT616)
Intensive Prolog (DM862)
Knowledge engineering (DM864)
Switching for digital telecommunications (T820)

Manufacturing: Management and Technology (MMT)

Manufacture, materials and design (PT610)
Structure and design of manufacturing systems (PT611)
Manufacturing management (PT613)
Polymer engineering (PT614)
Computer-aided engineering (PT616)
Quality techniques (PT619)
Implementation of new technologies (PT621)
Quality systems (PT622)

Courses start at the beginning of March, May and November, with application closing dates six weeks before these dates. If you would like to know more about these courses and have not already got CCI and MMT programme brochures, please ask:

*The Customer Services Department
PO Box 481
The Open University
Walton Hall
Milton Keynes
MK7 6BN
Telephone 0908 653917
Fax 0908 655159*

Computing for Commerce and Industry courses

There are courses in the Computing for Commerce and Industry brochure which may also be of interest to you (see panel).

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

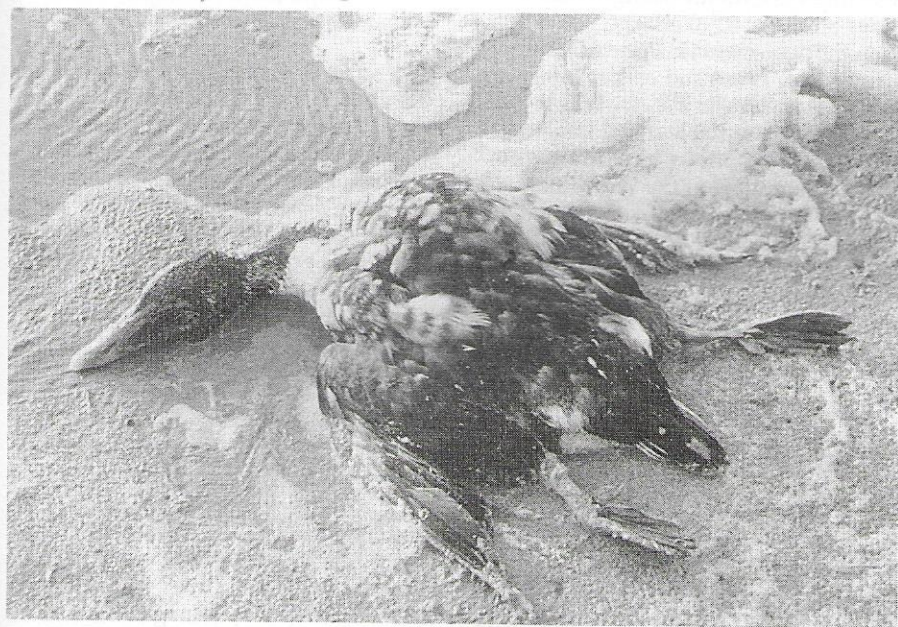
The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

ENVIRONMENTAL EDUCATION



CONTENTS

Interdisciplinary	28
Environment	
Conservation	28
Practical conservation for land managers	
Management planning	
Woodlands	
Boundary habitats	
Water and wetlands	
Grasslands, heaths and moors	
Urban habitats	
The changing countryside	
Environmental history	30
East Anglian studies: history of the environment	
Environmental science	30
Remote sensing	
Food production systems	
Environmental control and public health	
Environmental monitoring and control	
Ecology	

INTERDISCIPLINARY

Environment

Course code U206

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes
TV programmes Project Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This course is for anyone who is concerned about environmental issues, either local (like water quality and waste disposal) or global (like the ozone layer and the greenhouse effect).

Previous knowledge required

You are not expected to have any special knowledge. The course teaches specialist knowledge and skills (from science, social science, technology and the humanities) and draws them together in an interdisciplinary study.

Contents

First we introduce different ways of looking at environmental matters. Common-sense views of Cumbria are used to demonstrate the need for a better scientific understanding of how environments work and how society changes them. Then we present geological and ecological insights into the evolution of the Earth and its natural ecosystems. We identify the effects of human societies in the past and explore the nature of modern environmentalism.

Next we consider agricultural systems and urbanization against the background of economic and population growth. Agricultural systems are

examined in terms of sustainability and productivity. We analyse urban environmental problems in the First and Third Worlds, such as the provision of basic services and the influence of urban environments on human behaviour. Then we look at the consequences of our use of minerals and energy resources and consider political questions ranging from the use of alternative technologies to protest about matters like nuclear dumping.

An analysis of scientific and political responses to climatic change concentrates on the need to change policy even though scientific understanding is incomplete. These and earlier topics are brought together in a look at the concept of sustainable development and at the possibilities as seen by bodies ranging from the World Bank to Third-World pressure groups.

The whole course will equip you to make your own analyses and define your own point of view. The most important part of your work will be a small project in which you investigate a local matter and make reasoned policy recommendations about it.

See Section A of How to Apply

CONSERVATION

PRACTICAL CONSERVATION FOR LAND MANAGERS

The next six entries describe a foundation pack and five habitat packs produced in association with the Nature Conservancy Council. The series will be particularly useful to conservation advisers and trainers, farmers, foresters, students, local authority workers, conservation volunteers and others who are keen to improve the conservation of landscape and wildlife.

*The study pack prices below include both study texts and cassettes and are for individual purchasers only. Organizations must buy texts and cassettes separately at the prices shown.

Management planning

Study pack code P585S

Fee £70.68 (inc. £5.68 VAT)*

Study texts only code P585TA

Fee £20.35 (inc. £0.35 VAT)

Video cassette only code P585VS

Fee £117.50 (inc. £17.50 VAT)

About 40 hours of study

Subject knowledge required

None

The pack includes

Study texts Audio and video cassettes

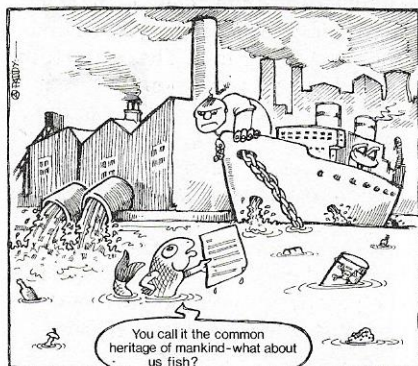
Management planning is the foundation pack for the Practical Conservation for Land Managers series. It will reinforce your awareness of the need for conservation and show you how to assess the landscape and wildlife value of an area. It draws attention to the importance of *maintaining* existing valuable habitats and landscape features, *enhancing* poorer sites and *creating* new conservation areas, and stresses the need to manage land for conservation purposes just as actively as for commercial or other purposes.

The main study text explains how to assess the present landscape and wildlife value of a site and how to combine this with an assessment of its business aspects; how to draw up a set of conservation objectives; how to choose appropriate management schemes and cost them; and how to prepare a complete management plan.

The video cassette illustrates the main problems to do with making conservation management decisions and the solutions being tried by a wide variety of land managers throughout Great Britain.

The audio cassette includes interviews with conservation advisers about the work they do and how they cope with their clients' needs, while the two supplementary booklets tell you about helpful organizations and the legislation and regulations relating to conservation.

See Section B of How to Apply



Woodlands

Study pack code P586S
Fee £40.23 (inc. £3.23 VAT)*

Study text only code P586TA
Fee £8.50

Video cassette only code P586VS
Fee £117.50 (inc. £17.50 VAT)

About 25 hours of study

Subject knowledge required

None

The pack includes

Study text Video cassette

This pack is about the practical steps of managing woodland, from the smallest broad-leaved copse to the largest coniferous forest. It gives you detailed information about assessing sites and making appropriate decisions for the development and implementation of a management plan.



The emphasis is on incorporating landscape and wildlife conservation into the primary, often commercial, objectives of timber production, game and recreation.

See Section B of How to Apply

Boundary habitats

Study pack P587S
Fee £40.23 (inc. £3.23 VAT)*

Study texts only code P587TA
Fee £8.50

Video cassette only code P587VS
Fee £117.50 (inc. £17.50 VAT)

About 25 hours of study

Subject knowledge required

None

The pack includes

Study texts Video cassette

Available from summer 1991

This pack is about the practical steps of assessing and managing boundary habitats. These include hedgerows, stone walls, ditches, banks, grass strips, roadside verges, railway lines, green lanes and footpaths: in other words, features that fall between other uses of the land and so are at risk of disturbance by other activities.

See Section B of How to Apply

Water and wetlands

Study pack code P588S
Fee £40.23 (inc. £3.23 VAT)*

Study text only code P588TA
Fee £8.50

Video cassette only code P588VS
Fee £117.50 (inc. £17.50 VAT)

About 25 hours of study

Subject knowledge required

None

The pack includes

Study texts Video cassette

Available from autumn 1991

This pack deals with the management of wetland habitats ranging from the running waters of streams and rivers to the standing waters of lakes, ponds and ditches and the wet ground of bogs and marshes: the distinctive feature is the presence of water throughout the year.

See Section B of How to Apply

Grasslands, heaths and moors

Study pack code P589S
Fee £40.23 (inc. £3.23 VAT)*

Study texts only code P589TA
Fee £8.50

Video cassette only code P589VS
Fee £117.50 (inc. £17.50 VAT)

About 25 hours of study

Subject knowledge required

None

The pack includes

Study texts Video cassette

Available from autumn 1991

Grasslands, heaths and moors form the greatest area of our countryside. They have largely arisen as a result of agricultural activities, but they are susceptible to change. This pack looks at management possibilities for calcareous, neutral and acidic grasslands, lowland heaths and upland moors.

See Section B of How to Apply

Urban habitats

Study pack code P584S
Fee £40.23 (inc. £3.23 VAT)*

Study texts only code P584TA
Fee £8.50

Video cassette only code P584VS
Fee £117.50 (inc. £17.50 VAT)

About 25 hours of study

Subject knowledge required

None

The pack includes

Study texts Video cassette

Available from autumn 1991

Urban habitats include woodlands, grasslands, ponds and footpaths but are distinctive in their size, the greater recreational use to which they are subjected and the involvement of the local community in their planning and management. This pack examines these special requirements.

See Section B of How to Apply

The changing countryside

Study pack code PD770
Fee £39.95 (inc. £3.21 VAT)

Subject knowledge required
 None

The pack includes

Study texts Audio and video cassettes

Discount scheme available – see page 89

Britain's countryside, after centuries of slow evolution, is undergoing a transformation. As technology increases agricultural yields and European Community subsidies are restricted, much of our farmland will no longer be needed and what we do with it is one of the biggest environmental questions facing us over the next decade. This new development comes on top of long-term social change. Since the war, employment on the land has declined and farm workers have moved to the towns in search of work. The accessible countryside has increasingly become peopled with commuters, while the more remote and scenically attractive areas have been taken over by a growing number of second-home owners and the retired. These newcomers have brought with them different expectations and requirements of the countryside and their presence is having serious consequences for rural services and amenities and for village life itself.

This pack examines the possible outcomes of these developments. With the help of three books, a video and two audio cassettes it considers the competing views of farmers and foresters, environmentalists, conservationists, the leisure industry, developers, planners and rural communities. It

is a pack for all who live in Britain's countryside and everyone who cares about a vital part of our heritage.

See Section B of How to Apply

This pack is the basic text for a taught course of the same title, described below.

The changing countryside

Course code D770
Half credit Second level

Fee £175
(£151 for those who have already purchased the study pack PD770)

Study period
Feb–Oct 1992 About 7 hours a week

Subject knowledge required
None

The course includes
Study pack PD770 (included in the full fee)
Study guide Personal tutor Assignments and exam

Optional day or weekend school

Certification
Course certificate
Can not count towards a BA degree

Who is the course for?

This course is for anyone who is seriously interested in studying issues of current importance in the countryside. It will be of considerable interest to those who have a professional involvement in countryside matters – local government officers, planners, teachers of environmental studies, conservationists, people in the leisure industry and those who work for statutory organizations concerned with the countryside. Members of voluntary rural interest groups will also find it of great value. The course may in the future be part of a proposed Diploma in Countryside Conservation.

Previous knowledge required

You are not expected to have any special knowledge, but a serious concern for the problems of the countryside is assumed.

Contents

Britain's countryside, after centuries of slow evolution, is undergoing a transformation. As technology increases agricultural yields and European Community subsidies are restricted, much of our farmland will no longer be needed and what we do with it is one of the biggest environmental questions facing us over the next ten years. This new development comes on top of long-term social change. Since the war, employment on the land has declined and farm workers have moved to the towns in search of work. The accessible countryside has increasingly become peopled with commuters,

while the more remote and scenically attractive areas have been taken over by a growing number of second-home owners and the retired. These newcomers have brought with them different expectations and requirements of the countryside and their presence is having serious consequences for rural services and amenities and for village life itself.

The course examines in detail the possible outcomes of these developments and offers a thorough examination of some important questions. These include:

- How effective will proposals to deal with food surpluses be?
- What would be the effect of large-scale afforestation?
- Are we sufficiently flexible in planning the use and development of rural land?
- How could we best stimulate the rural economy and provide new opportunities for work?
- Should we be developing more leisure activities?
- Is the government serious enough about conservation?
- How are the rural poor likely to fare in an increasingly free market agriculture?

The programme of study includes guided reading of books specially prepared for the course, group work and discussions, writing essays and preparing a short report based on project work.

See Section A of How to Apply

ENVIRONMENTAL HISTORY

East Anglian studies: history of the environment

Study pack code PS731
Fee £12.50

Subject knowledge required
None

The pack includes
Study text Field guides Time chart
Discount scheme available – see page 89

The topics covered in the main text include the geological history of the area and the biology and geology of the ice ages; recolonization by plants and animals after the last ice age and the arrival of early man; the origins of the Broads and the history of Fenland; the sheep economy before 1600; the history of wastelands, commons and woodlands; the mediaeval church; environmental controversies and pressures.

The field guides give information

about access to sites and explain the biological or archaeological background as well as suggesting activities that can be carried out at each site.

Personal callers can buy this pack at the East Anglia Regional Centre (see page 90), or see Section B of How to Apply

ENVIRONMENTAL SCIENCE

Remote sensing

Study pack code PS670
Fee £55

About 40 hours of study

Subject knowledge required
Basic knowledge of natural sciences

The pack includes
Study text Colour plate booklet

This pack is the culmination of several years of research into the educational needs of the remote-sensing community. It explains the principles and practice of using satellites and aircraft to record images, and their application in environmental sciences.

Who is the pack for?

Remote sensing is playing an increasingly important role in monitoring both man-made and natural changes in the environment, so this pack will be of interest to many people including environmentalists and industrialists.

Educators in environmental sciences will find the pack invaluable for keeping up to date with the latest techniques and for use in residential courses. It has been designed with the needs of scientists and technicians in developing countries very much in mind. The level is suitable for final-year school students and first-year undergraduates who have a basic knowledge of natural sciences but no knowledge of remote sensing.

Contents

The study text includes eight chapters, a comprehensive glossary of remote-sensing terms and an index. It examines the main social, economic and environmental problems facing the world today; the physical principles you need to understand the design of remote-sensing systems and the data they produce; how the human visual system interprets and manipulates images; the operation of remote-sensing detectors; the structure of digital images and an introduction to digital image processing. Two of the chapters develop some of the themes by looking at applications and interpretation of images of atmospheric phenomena, the land surface – oceans,

ivers and lakes – natural vegetation, human activities and geology.

The study text contains many illustrations, exercises and self-assessment questions. It is accompanied by a full-colour booklet with examples of the applications of remote sensing.

See Section B of How to Apply

Food production systems

Course code T274

Details of this course are on page 71.

Environmental control and public health

Course code T234

Half credit Second level

Fee £475

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes TV programmes Home kit Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Possibly available for the last time in 1992

This course gives you a basic understanding of our natural resources (land, air and water), of related environmental problems and environmental legislation.

Who is the course for?

The course lays a foundation for developing a career and keeping up to date in many environmental and management areas. Work with the home kit may present some problems if you have impaired sight or hearing.

Previous knowledge required

You are expected to be familiar with elementary chemistry and mathematics.

Contents

We begin with an introduction to the main themes of the course: natural cycles, how long they take and the influence of man's intervention. Then we explain how epidemiology can be used to assess the possible effects of environmental pollution on health. On the subject of pollution chemistry we introduce the elementary chemistry you need for the experimental work and to understand water and air pollution processes. This will demand a considerable amount of work if you have done little or no chemistry before.

We then discuss the monitoring, health and environmental effects and methods of control of different kinds of pollution – air, water and noise.

Experimental work with the home kit is included here. Finally we consider the problems and management (collection, disposal, reclamation) of domestic, hazardous and special wastes, including radioactive wastes.

The number of places on this course is limited, so you are advised to apply early.

See Section A of How to Apply

Environmental monitoring and control

Course code T334

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes Optional home kit Personal tutor Assignments, project and exam

You will need

Scientific calculator

Certification

Course certificate

Could count towards a BA degree

This course is about strategies for controlling environmental pollution. It analyses pollution control problems and performance specifications.

Who is the course for?

This course is for practising environmental professionals in land, air, water and noise pollution who want to bring their knowledge up to date.

Previous knowledge required

You must have studied the Open University course T234 *Environmental control and public health* (or the course it replaced, PT272). You also need to be

able to use graphs and mathematical formulae, and knowledge of basic chemistry.

Contents

The main text is divided into four loose-leaf blocks. Three textbooks accompany the blocks on noise, water and air.

Wastes discusses strategies for managing and techniques for disposing of domestic and hazardous wastes. It looks in particular at transport, selecting and managing landfill sites, other methods of disposal, leachate and gas control and recycling of domestic refuse.

Noise is mainly about the technical aspects of noise control, including prediction schemes and sound insulation of buildings. There are case studies of public inquiries and industrial noise.

Water covers two main topics:

- Water supply – estimating demand, quality treatment processes and legislation.
- Effluent (sewage and trade) control – sewerage systems, drainage design and economics.

Air also deals with two main topics:

- Dispersal of air pollution – modelling and control processes.
- Vehicle emissions.

We can offer only 25 places on this course, so you are advised to apply early.

See Section A of How to Apply

Ecology

Course code S326

Details of this course are on page 44.

GEOGRAPHY

There are courses in the Geography section which may also be of interest to you (see page 57).



Noise barrier alongside a motorway

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

MATHEMATICS

$$\exp z = w, \quad w \neq 0$$

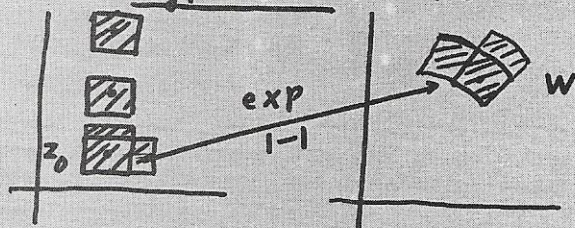
$$e^x = |w| \quad x = \log |w|$$

$$w = |w| (\cos \theta + i \sin \theta)$$

$$\exp z = e^x (\cos y + i \sin y)$$

$$y = \theta + 2n\pi$$

$$z = \log |w| + i\theta + 2n\pi i$$



CONTENTS

Interdisciplinary

34

Graphs, networks and design

Pure mathematics

34

Introduction to pure mathematics

Mathematics in computing

Complex analysis

Number theory and mathematical logic

The Lebesgue integral

Applied mathematics

35

An introduction to calculus

Modelling with mathematics: an introduction

Mathematical models and methods

Computational mathematics

Numerical methods for differential equations

Mathematical methods and fluid mechanics

Introduction to non-linear dynamics

Statistics

38

Statistics in society

Probability and statistics

Applications of probability

Statistical methods

History of mathematics

39

Topics in the history of mathematics

INTERDISCIPLINARY

Graphs, networks and design

Course code **TM361**

Details of this course are on page 70.

MSc in Mathematics

There is an MSc in Mathematics which may be of interest to you. The closing date for applications to study in 1992 is 31 May 1991. If you would like more information please ring the Central Enquiry Service (0908 653231) and ask for the *Taught Master's Degree Prospectus*.

PURE MATHEMATICS

Introduction to pure mathematics

Course code **M203**

Full credit Second level

Fee **£425**

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Scientific calculator

Certification

Course certificate

Could count towards a BA degree

This course gives an introduction to many of the basic concepts of pure mathematics and the relationships between them. It introduces the theory of each subject and offers illustrative examples and useful techniques. There is considerable emphasis on rigorous proof, so this course will help you to read and understand proofs in mathematics textbooks and to construct simple proofs for yourself.

Who is the course for?

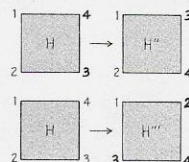
The course is intended for those who have studied mathematics to at least university entrance standard. It is particularly useful if you are or would like to be teaching A-level mathematics, as it contains a lot of background to A-level syllabuses.

4. Problem 1

Write down the elements of the subgroups H'' and H''' of S_4 obtained from H by:

(a) interchanging the labels 3 and 4;

(b) relabelling the vertices using the permutation (234).



8. Problem 2

Let $x = (1235) \in S_5$. Calculate $g \circ x \circ g^{-1}$, by composing the three permutations, and compare your answer with the permutation obtained by using g to rename the symbols in x , for (a) $g = (14)(253)$; (b) $g = (13425)$.

Previous knowledge required

You should have some familiarity with sets, functions, calculus (differentiation and integration) and plane Euclidean geometry, vectors, matrices and groups.

Contents

Introduction Revision of sets and functions, curve sketching, symmetry, symmetry groups, abstract groups and subgroups, co-ordinate and vector geometry.

Linear algebra Vectors, matrices, linear transformations, eigenvectors, diagonalization and abstract vector spaces.

Group theory Isomorphisms, cosets and Lagrange's theorem, permutations, conjugacy, normal subgroups, homomorphisms, first isomorphism theorem, quotient groups, group actions, orbits and stabilizers.

Geometry Affine geometry, quadric surfaces, special relativity, projective geometry, non-Euclidean geometry, the Klein view of geometry.

Analysis Real numbers, sequences, series, functions, continuity, differentiation, integration, the fundamental theorem of calculus, power series, differential equations, flows, proofs in analysis.

See Section A of *How to Apply*

Mathematics in computing

Course code **M261**

Details of this course are on page 20.

Complex analysis

Course code **M332**

Half credit Third level

Fee **£275**

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio and video cassettes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Possibly available for the last time in 1992

This is a standard treatment of functions of a complex variable.

Who is the course for?

The course is suitable whether you are interested in pure mathematics or you wish to use complex variable methods in branches of applied mathematics, science or technology.

Previous knowledge required

You will need a good understanding of the rigorous approach to analysis – continuity, differentiability, power series, integration. These topics are treated in chapters 5–14 of Spivak, *Calculus* (W. A. Benjamin/Addison-Wesley), using the definitions and properties of continuity etc. in terms of ϵ - δ .

Contents

We begin with a review of the aspects of real analysis which are particularly important for the rest of the course. Then we introduce complex numbers and functions which map complex numbers into complex numbers. The main part of the course covers the basic theory of analytic (i.e. differentiable) functions – the Cauchy-Goursat theorem, Cauchy integral formula, Taylor and Laurent series, contour integration and residue theory. At the end of the course you can choose either further study of analytic functions as mappings from one set in the complex plane to another, or a study of Laplace transforms with particular reference to linear constant coefficient differential equations and asymptotic sequences.

See Section A of *How to Apply*

Number theory and mathematical logic

Course code M381

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

The course teaches two topics in pure mathematics: number theory and mathematical logic.

Who is the course for?

The course is intended for those who have studied mathematics to at least the end of the first year of a university mathematics degree, or the equivalent (e.g. M203 *Introduction to pure mathematics*, described above).

Previous knowledge required

You need no particular mathematical background but you must have some facility with mathematical proof, notation and abstraction.

Contents

Number theory looks at some classical problems concerning the integers, including the solution of Diophantine equations, the distribution of prime numbers, the theory of congruences, quadratic reciprocity and the theory of continued fractions.

Mathematical logic sets out to prove Gödel's incompleteness theorem, a result of philosophical importance for the limitations of mathematical proof. To lay the ground for this theorem, we look first at apparently different notions of computability which all in fact coincide, and then discuss a formal proof system for basic number theory.

See Section A of *How to Apply*

The Lebesgue integral

Course code M431

Half credit Fourth level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set book Audio and video
cassettes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course will be of interest to those who wish to study mathematics for its own sake. It would be particularly useful if you are interested in mathematical aspects of probability theory, Fourier series, quantum mechanics, chaos theory and any of the many areas in which integration can be applied.

Previous knowledge required

A sound knowledge of differential and integral calculus and some previous exposure to the real number system are strongly recommended. Such knowledge can be obtained from, for example, the Open University mathematics foundation course (M101) and M203 *Introduction to pure mathematics*. A certain mathematical maturity would be very useful; the Open University course M332 *Complex analysis* would give you this.

Contents

The course is based on the book *Lebesgue Integration and Measure* by Alan J. Weir (paperback edition, Cambridge University Press), without which it will not make sense.

We start with a preliminary study of the real number system and a review of Riemann integration. Then we begin the construction of the Lebesgue integral by introducing and studying three classes of functions in order of increasing complexity: characteristic functions of bounded intervals, step functions and limits of monotonic sequences of step functions. By defining the integral for functions in these classes we arrive at the central object of the course, the Lebesgue integral. With this in hand we then study the fundamental theorems of the subject, which concern the relationship between integration and limits.

The last part of the course is more abstract and applied, examining normed spaces, Hilbert spaces and infinite series in such spaces. In this abstract setting we consider various spaces of integrable functions. The course ends with the Lebesgue-Hilbert treatment of Fourier integrals.

See Section A of *How to Apply*

APPLIED MATHEMATICS

An introduction to calculus

Course code M5284

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes Video cassettes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

This course introduces and illustrates some of the methods and language of mathematics, and shows how this language is used to describe the physical world.

Who is the course for?

The course supplies the basic skills and concepts necessary for the study of higher-level courses with a significant mathematical content, especially in physics and applied mathematics. It is also suitable if you are interested in studying mathematics for its own sake. If you wish to count it towards a BA degree you should note that you will not be able to count both this course and the mathematics foundation course (M101) or TM282 *Modelling with mathematics: an introduction*.

Previous knowledge required

You need basic mathematical skills, roughly those covered in the first four years of secondary school mathematics. A diagnostic test is provided so that you can judge for yourself whether you meet the requirements or need further preparation.

Contents

The course is in four sections. The first two cover the basic concepts and techniques necessary for the study of calculus. The topics include quadratic equations, the binomial theorem, the laws of indices, logarithms, trigonometry, functions and some simple statistical concepts.

The third section, the core of the course, introduces calculus and you will learn the techniques of differentiation and integration and some of their applications.

The last section introduces vector quantities and the calculus of functions involving vector quantities. Calculus

techniques that are needed for more advanced courses, such as the mechanics of moving bodies and the properties of electric, magnetic and gravitational fields, are also explained.

See Section A of How to Apply

Modelling with mathematics: an introduction

Course code TM282

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Scientific calculator

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course will be of interest if you wish to learn basic mathematical skills, including calculus, and how to use them in mathematical modelling. The mathematics in the course is required for some technology courses. This course is shorter and much less advanced than MST204 *Mathematical models and methods*.

The course relies heavily on diagrams and so may be unsuitable if you have a visual impairment.

If you wish to count TM282 towards a BA degree you should note that you will not be able to count both this course and the mathematics foundation course (M101) or MS284 *An introduction to calculus*.

Previous knowledge required

You need basic arithmetic, algebra, geometry and trigonometry, and you must know how to use a scientific calculator. A diagnostic quiz is available to help you decide whether your present level of mathematics is adequate. The two-volume book *Count-down to Mathematics* by L. Graham and D. Sargent (Addison-Wesley) is recommended as preparatory study if you need to brush up on the necessary topics.

Contents

The mathematical topics are algebra and graphs, geometry and vectors, differentiation (including finding maxima and minima), integration and solving differential equations. Throughout the course there is an

emphasis on the modelling process, which is just as important as the mathematics.

The residential school is designed to give you practice in both mathematical techniques and mathematical modelling of real problems.

See Section A of How to Apply

Mathematical models and methods

Course code MST204

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Computing at residential school
Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate
Could count towards a BA degree

This course is about the use of mathematics in solving real problems.

Who is the course for?

The course will be of interest if you feel you need a grounding in the mathematics or mathematical reasoning you use in your work, or if you wish to apply mathematics to a wider range of problems than at present.

Previous knowledge required

You should be able to solve linear and quadratic equations in one unknown; multiply and add polynomials; and factorize quadratic polynomials. You should know Pythagoras' theorem and how to use Cartesian co-ordinates; the definition and basic properties of the trigonometric ratios, sine, cosine and tangent; and the definitions of the corresponding inverse functions. You should also be able to integrate and differentiate.

If you are new to these topics, the Open University courses TM282 *Modelling with mathematics* or MS283 *An introduction to calculus* would be a suitable introduction.

Contents

The 'modelling' half of the course covers classical mechanics and non-mechanical models such as population models, linear programming and heat transfer. It includes project work in which you can do some modelling. Part of this is carried out at the residential school. The 'methods' half of the course comprises work on differential equations; methods for three-dimensional

problems; complex numbers; matrices; and numerical mathematics and approximation methods.

See Section A of How to Apply

Computational mathematics

Course code M371

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes Computing
Personal tutor Assignments and exam

You will need

Calculator Home computer

Certification

Course certificate
Could count towards a BA degree
Home computing course – see page 4

The course is concerned with some commonly used techniques in numerical analysis and operational research for solving problems by computer, and with how and when the techniques can be applied.

Who is the course for?

The course will be of interest to all users of numerical software in industry, science, commerce and research. It is not recommended if you have impaired manual dexterity, and it may present difficulties if you have a visual handicap.

Previous knowledge required

You need no experience of programming, but you must have a mathematical maturity of the level developed by the Open University course M203 *Introduction to pure mathematics* or MST204 *Mathematical models and methods*.

Contents

The course is divided into four blocks of work: *Block I* solutions of non-linear equations, and systems of linear and non-linear equations; *Block II* linear and integer programming; *Block III* non-linear optimization for unconstrained and constrained minimization problems; *Block IV* simulation, Monte Carlo methods, queue simulations, SIMIAN.

The mathematical formulation and application of these techniques to real problems allows you to develop computational skills using software developed for use with the home computer. The computer graphics and the audio cassettes are used to help with the more difficult concepts in the course.

See Section A of How to Apply

Numerical methods for differential equations

Course code M372

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes Computing
Personal tutor Assignments and exam

You will need

Calculator Home computer

Certification

Course certificate

Could count towards a BA degree

Home computing course – see page 4

This course teaches both the theory and the practical application of numerical methods used to solve ordinary and partial differential equations, including finite difference and finite element methods. Software on the home computer is used extensively for both teaching and applications.

Who is the course for?

The course will be of interest if you use commercial software to solve differential equations in industry, science, engineering or research. It is not recommended if you have impaired manual dexterity, and it may present difficulties if you have a visual handicap.

Previous knowledge required

You need no experience of programming, but you must have a mathematical maturity of the level developed by the Open University course MST204 *Mathematical models and methods*.

Contents

The course is divided into four blocks of work: *Block I* methods of interpolation and integration; *Block II* initial value problems in ordinary differential equations; *Block III* boundary value problems using finite difference methods; *Block IV* boundary value problems using finite element methods.

The mathematical formulation and application of these techniques to real problems allows you to develop computational skills using software developed for the home computer. The computer graphics and the audio cassettes are used to help with the more difficult concepts in the course.

See Section A of How to Apply

Mathematical methods and fluid mechanics

Course code MST322

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio and video cassettes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course gives an introduction to the subject of fluid mechanics. Mathematical models for fluid flows are constructed and the mathematical methods required for their solution are presented.

Fluid mechanics is the study of the flow of liquids and gases. The flow of a fluid exhibits many complicated features and a full description is often very difficult, if not impossible. But a firm understanding of certain basic concepts enables us to investigate many applications of fluid phenomena. Simple mathematical models of fluid flows require the application of *mathematical methods* so that flow problems can be solved and predictions made about reality.

Who is the course for?

This course is for applied mathematicians, scientists and engineers. If you have impaired sight you may have difficulty in studying the video material.

Previous knowledge required

You should be familiar with first- and second-order ordinary differential equations, the solution of linear simultaneous equations, elementary vector field theory, partial differentiation, basic particle (Newtonian) mechanics.

Contents

The course gives a good working knowledge of the basic models in fluid mechanics (e.g. static models, stream functions, open channel flow, viscous flow, water waves). Mathematical methods include the solution of Sturm-Liouville problems, the diffusion equation, Laplace's equation and the wave equation.

See Section A of How to Apply

Introduction to non-linear dynamics

Course code MS323

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course is an introduction to dynamic systems of two degrees of freedom with emphasis on the behaviour of non-linear systems found in the physical sciences and engineering.

Who is the course for?

The course should appeal to applied mathematics students, particularly if you are interested in systems described by non-linear differential equations. The subject can be studied for its intrinsic interest: the behaviour of these systems is varied and so complex as to border on the bizarre. This course gives you the necessary background to understand some of this behaviour. Applications in the physical sciences, ranging from the effects of strong electromagnetic fields on atoms to the motion of galaxies, should interest physics students.

Previous knowledge required

You must understand the calculus of functions of one and two variables and be proficient in ordinary and partial differentiation, integration, the manipulation and basic theory of 2×2 matrices and the solution of simple linear differential equations.

Contents

We start by revising some mathematical techniques, then give a general introduction to the theory of two coupled differential equations and the classification of their fixed points. We move on to Hamiltonian systems: first basic theory, Lagrangians, canonical transformations, then bound conservative motion and particular types of small time-independent and time-dependent perturbations to this motion. Finally we introduce, through elementary examples, chaotic motion: that is, motion of a deterministic system which is not predictable.

See Section A of How to Apply

PHYSICS COURSES

There are courses in the Physics section (page 49) which may also be of interest, particularly SM355 *Quantum mechanics*, SMT356 *Electromagnetism* and S354 *Understanding space and time*.

STATISTICS

Statistics in society

Course code MDST242

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

What is 'statistics' and what can it do? This course sets out to answer these questions by using statistical techniques to investigate everyday situations.

Who is the course for?

The course is for anyone who is interested in the influence of statistics on everyday life, as well as for those who want a basic understanding of statistical ideas.

Previous knowledge required

You will need some basic mathematical skills. We shall provide a diagnostic test which lets you know what we require and enables you to judge whether you have the necessary skills. Volume 1 of *Countdown to Mathematics* by L. Graham and D. Sargent (Addison-Wesley) will help you overcome any problems raised by the diagnostic test.

Contents

The course is divided into three sections. The first asks 'are we getting better off?' and develops techniques of exploratory data analysis. Methods of summarizing data, graphical representation and relationships between variables are discussed, and we examine how price and pay indices are obtained from surveys.

The second section uses education as its topic. The basic ideas of statistical inference are introduced in the context of questions such as 'does education

pay?' and 'what factors affect educational performance?' The statistical concepts include probability, confidence intervals, hypothesis testing, contingency tables and the normal distribution.

The third section looks at medicine and health. We investigate statistical aspects of experimentation in drug testing. The relevance of statistics to private and public decision-making is underlined by asking questions like 'is my child developing normally?' and by looking at the relationship between smoking and lung disease.

See Section A of *How to Apply*

Probability and statistics

Course code M245

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

You will need

Calculator

Certification

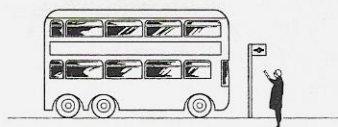
Course certificate

Could count towards a BA degree

Who is the course for?

This introductory course in probability and statistics should be of interest if you have studied mathematics to A-level or the equivalent and would like a mathematical grounding in these topics because you use them in your work or teach them.

Catching the bus



A: chance of getting a seat – 2 in 3

B: chance of having to stand – 1 in 6

C: chance that the bus is full –

Previous knowledge required

You are not expected to have any knowledge of probability or statistics. You should be familiar with the manipulation of algebraic expressions, have met the concept of an infinite series and be able to differentiate and

integrate polynomials, trigonometric, exponential and logarithmic functions, and to integrate using substitution of parts. You are expected to be familiar with the use of a calculator.

Contents

The course will give you a good working knowledge of simple probability models and develop your statistical intuition. It concentrates on applications and the handling of underlying distributions and teaches the essential ideas of making inferences from statistical data.

About half the course is devoted to introducing probability and developing probability models. The other half uses these models to develop the essential ideas of statistical inference. Confidence intervals and hypothesis tests are introduced and developed for a variety of situations. Statistical intuition is fostered throughout the course, including the idea and practice of simulation.

Television is used to illustrate the underlying concepts, present practical illustrations and show computer simulations. Audio cassettes help you to practise new techniques.

See Section A of *How to Apply*

Applications of probability

Course code M343

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set book
Audio and video cassettes Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course would be appropriate if you are interested in the development and application of probability models to describe practical situations in which some random element is present, and in using probability theory to study them.

Previous knowledge required

You should have studied probability at an elementary level and, although advanced techniques used in the course are taught from scratch, you should be able to use calculus and to perform algebraic manipulation. You should also be familiar with such concepts as

probability density functions and expectation. M245 *Probability and statistics*, described above, provides a suitable introduction.

Contents

The course introduces models to describe patterns of events that occur in time, such as earthquakes, and in space – the occurrence of a species of plant in a wood. Practical situations which occur only at discrete time points, including the ruin of a gambler, are studied. Probability models are developed for situations, such as the spread of an epidemic, in which events may occur at any time. The last section of the course investigates other situations involving probability, including genetics and alterations in stock market prices.

Audio cassettes are used to teach and give you practice in techniques. A video cassette supplied on loan shows computer animations of various models. This does not contain any new material, but will enhance your appreciation of the course text.

See Section A of How to Apply

Statistical methods

Course code M345

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Audio cassettes
Home kit (HEKTOR) Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This is a course for students who have had an introduction to basic statistical ideas and wish to extend their skills to deal with the data a statistician is likely to meet in his or her daily work. The course helps you develop statistical common sense, introduces the use of statistical methods in planning experiments and surveys, and develops methods to deal efficiently with a wide range of applications. The statistical reasoning is explained without giving a full mathematical treatment.

Previous knowledge required

You are expected to have a knowledge of mathematics to the standard of A-level or the Open University mathematics foundation course, and a basic

knowledge of statistics. Elementary matrix algebra is used; you can acquire the necessary expertise by reading a short text supplied as part of the course materials. You will need a basic understanding of probability, distributions and elementary hypothesis testing and estimation, such as is given in M245 *Probability and statistics*.

Contents

The methods of analysis covered include regression, analysis of variance, distribution-free methods, methods of categorical data, and graphical methods for multivariate data. You will use a statistical computer package to analyse data drawn from a variety of applications in medicine, science, technology and sociology.

See Section A of How to Apply

HISTORY OF MATHEMATICS

Topics in the history of mathematics

Course code MA290

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

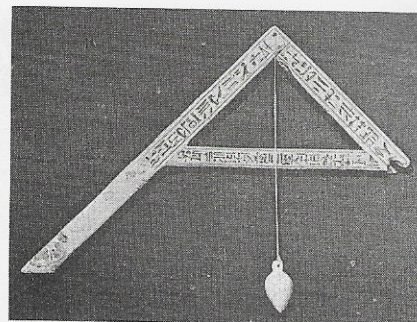
Mathematics is sometimes thought of as a language for applications, sometimes as a pure field of study. It has a long history in both respects, going back at least to the Egyptian and Mesopotamian civilizations of the third millennium BC. In this course we look at how some important topics have developed since then, and at what has stimulated or influenced this development.

Who is the course for?

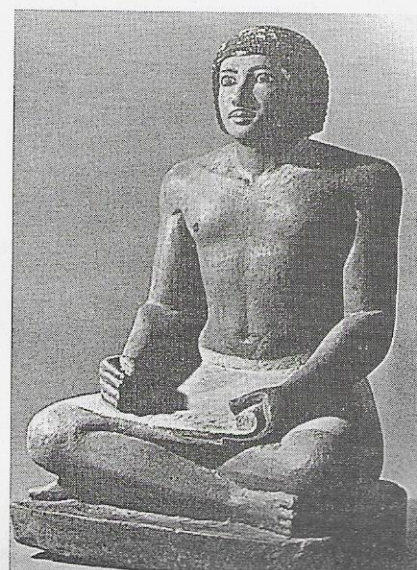
This course is suitable for teachers and for those interested in the origins and development of an increasingly important part of our culture, as well as for students of mathematics who want to understand the background to modern mathematical subjects.

Previous knowledge required

You are expected to have some mathematical and historical knowledge.



Set square with plumb-line, c1300 BC



An Egyptian scribe, c2500 BC

Contents

The topics include the Greek idea of rigorous mathematical proof; how problem-solving with numbers became algebra; the seventeenth-century ferment (the century of Kepler, Descartes, Pascal, Leibniz and Newton) from which modern mathematics began to emerge; the eighteenth-century consolidation and further developments especially associated with the name of Leonhard Euler; and in the nineteenth century new geometries and algebras, renewed interest in axiomatization, new approaches to a more rigorous calculus and the work of the computer pioneer Charles Babbage.

Within this generally chronological framework we discuss other themes such as the social context of mathematical activity in the past, the means of communication among mathematicians and the educational context within which knowledge has been passed on, changing conceptions of what mathematics is and how mathematicians have been influenced or challenged by their knowledge of mathematical history.

See Section A of How to Apply

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.



Albert Einstein as a student (c.1905)
(Eidgenössische Technische Hochschule)

SCIENCE

CONTENTS

Biology

42

Biology: form and function
Genetics
Biology: brain and behaviour
Animal physiology
Biochemistry and cell biology
Ecology
Evolution

Chemistry

45

Organic chemistry
Inorganic chemistry: concepts and case studies
Matter in the Universe
Physical chemistry: principles of chemical change
Organic chemistry: a synthesis approach
Inorganic chemistry

Earth sciences

47

Remote sensing
Geology
The Earth's physical resources
Oceanography
Understanding the continents: tectonic and thermal processes of the lithosphere
Evolution

Physics

49

Discovering physics
The physics of matter
Matter in the Universe
Images and information
Understanding space and time
Quantum mechanics
Electromagnetism
Electronic materials and devices

BIOLOGY

Biology: form and function

Course code S203

Full credit Second level

Fee £450

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Home kit Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This course will give you a good coverage of general biology. It is for anyone who is interested in plants and animals.

Previous knowledge required

You should have some knowledge of basic biological principles, equivalent to A-level biology or the Open University science foundation course.

Contents

Three basic themes underlie the course: energy relationships, structure-function relationships and mechanisms of regulation and control. There is a general emphasis on adaptation to environment. We begin by studying the diversity of organisms and introducing micro-organisms, plants and animals. We examine some of the biological factors that have promoted and maintained such a huge variety of organisms, and introduce examples from recent research that have helped to provide an explanation for diversity. Our consideration of the diversity of organisms ends with a detailed summary of the anatomy, life history and taxonomy of the most abundant and diverse groups of plants and animals.

The unifying features characteristic of all organisms are demonstrated by study of cell structure and function. We examine the dynamics of cell metabolism, looking particularly at enzymes as regulators and cell membranes as regulatable barriers.

In animal physiology we consider the parts hormones and nerve cells play in regulating and controlling reproductive cycles and homeostasis. This is followed by study of respiratory and circulatory systems, then feeding, digestion, excretion and osmoregulation. We look particularly at mammals and insects, but many references to other groups of animals are made.

The study of plant physiology begins with plant structure, photosynthesis, ion uptake and transport of nutrients, followed by water relations. Cell growth and development in plants are illustrated by looking at the life-cycle of flowering plants from germination to seed production.

Developmental biology follows with a discussion of the processes of growth, cell differentiation and morphogenesis in terms of the properties of cells and the interactions which result in the integrated form and function of the mature organism.

See Section A of How to Apply

Genetics

Course code S298

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Home kit Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

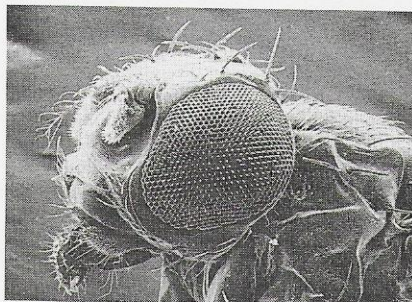
This course is for anyone who is interested in the study of heredity which, since heredity occupies a special place in our origins and our possible future, is central to our understanding of the living world.

Previous knowledge required

You must have some biological knowledge and be familiar with some commonly used biological terms.

Contents

The combination of evolutionary theory, developmental biology, Mendelism and molecular biology required in the study of heredity holds promise of a unified explanation of the



Scanning electron micrograph of eye of one hereditary strain of *Drosophila melanogaster*

living world. Moreover, it has become part of the social, political and philosophical history of the twentieth century and has generated the techniques of genetic engineering that may have profound implications for the future of our own species.

This course presents genetics within the broader context of the study of heredity. It examines the inheritance of the genes that affect characters in organisms, the developmental processes by which the characters are produced, and the relationship between the developmental processes and the external environment in which they occur. The main questions that concern the geneticist are introduced. What are the sources of similarity and variation between individuals? What is the nature of development, and how does it limit the range of variations produced in different environments? What is the genetic material; how is it copied and transmitted; how does it express itself? What are the patterns of genetic variation in populations; what are the mechanisms of evolution?

See Section A of How to Apply

Biology: brain and behaviour

Course code SD206

Full credit Second level

Fee £450

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Audio and video cassettes TV and radio programmes Home kit Residential school Personal tutor Assignments and exam

You will need

Some simple materials for home experiments

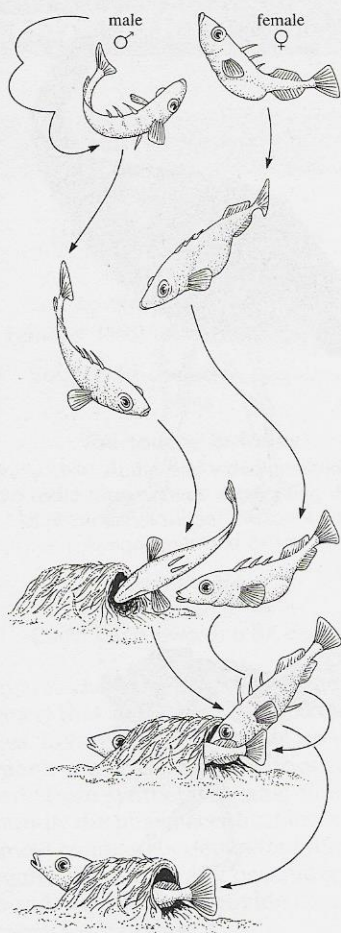
Certification

Course certificate
Could count towards a BA degree

This course presents an interdisciplinary approach to the brain and behavioural sciences and the relationships between them. It compares the behaviour and nervous systems of human beings and other animals and, at the same time, examines the attributes uniquely associated with a complex nervous system. We consider the implications for human health of the knowledge we have of behaviour and the nervous system, and show how the study of disease has helped in the study of normal physiology.

Who is the course for?

The course will interest anyone who wants to learn about how the brain works and how it influences the behaviour of human beings and other



The courtship sequence of the three-spined stickleback

animals. It should appeal to many people including biologists who want to extend their knowledge of neurophysiology and animal behaviour, psychologists who want to extend their knowledge into the more physiological aspects of behaviour, and nurses, social workers and those in paramedical fields who are interested in behaviour in a biological or medical context. Serious disabilities that would hinder laboratory skills, such as impaired sight or manual dexterity, are likely to make the course difficult but by no means impossible.

Previous knowledge required

A scientific background would be helpful but is not necessary.

Contents

The course is divided into seven books. The first two give you a core of basic knowledge about animal behaviour and neurobiology which enables you to go on to a detailed interdisciplinary study of a series of topics: the senses and communication; learning and the development of the brain and of behaviour; the control of behaviour; mental health, brain damage and disease. In the last book the study of the brain and behavioural sciences are placed in a conceptual, historical and social context.

See Section A of How to Apply

Animal physiology

Course code S324

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This is an advanced course that examines how animals work. It is concerned primarily with 'whole animal' physiology, concentrating on how the various systems of the body interact, co-ordination is achieved and the physiology of the animal relates to its environment. It looks particularly at vertebrate species, especially mammals, and many examples are to do with human beings.

Who is the course for?

The course will appeal to anyone who is interested in how their own bodies and those of other animals work. It will be useful to people who work in medicine and paramedicine, biological research (e.g. as technicians) and as biology teachers.

Serious disabilities that would hinder laboratory skills, such as impaired sight or manual dexterity, would make this course difficult.

Previous knowledge required

You should have a good knowledge, equivalent to A-level, of basic biological principles.

Contents

The physiology of the foetus in relation to that of the mother is considered first. Then we look at some of the problems faced by the newborn, such as regulation of body temperature, and analyse the ways in which adult animals such as diving mammals cope with extremes of temperature and shortage of oxygen. Next we consider the physiological basis of growth and how the various functions of animals relate to their size. We examine animal movement from several points of view including the structure and workings of the component tissues (especially muscles), the interaction of these systems during sustained swimming in fish and prolonged flight in birds, and the mechanisms that allow animals to migrate long distances.

See Section A of How to Apply

Biochemistry and cell biology

Course code S325

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio and video cassettes
TV programmes Residential school
Personal tutor Assignments and exam

Certification

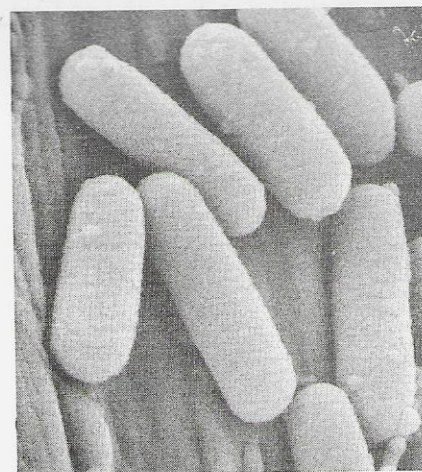
Course certificate
Could count towards a BA degree

Who is the course for?

The course is particularly suitable for biology and chemistry teachers, doctors, paramedical workers and microbiologists.

Previous knowledge required

You must have basic biochemistry and chemistry, since the course assumes an elementary knowledge of the following: spectroscopy, pH, rate constant, simple reactions of alcohols, esters, amines, aldehydes, acids, macromolecular and cell structure, protein synthesis, enzyme catalysis, photosynthesis, TCA cycle, glycolysis, oxidative phosphorylation.



Scanning electron micrograph of bacterial cells on the point of a pin, at x 60 magnification

Contents

This course covers in depth six related topics in modern biochemistry and cell biology: muscle metabolism, macromolecules and cell architecture, gene expression, microbiology, immunology, receptors and cell communication. It outlines some of the experimental evidence for current thinking in the six areas, indicating the techniques used and the relevance of their findings to biotechnology, medicine, agriculture and industry.

See Section A of How to Apply

Ecology

Course code S326

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV programmes Residential school
Personal tutor Assignments and exam

You will need

Calculator

Certification

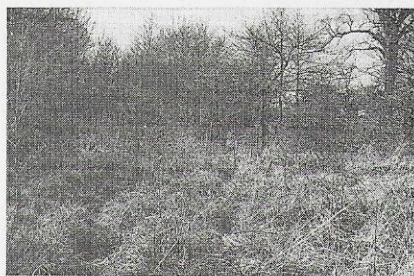
Course certificate

Could count towards a BA degree

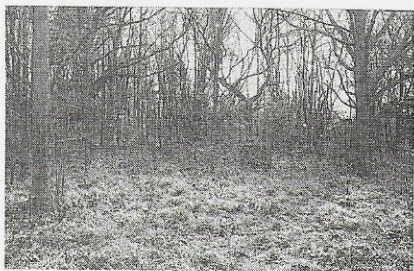
Ecology is the study of living organisms and their relationships with one another and with their environment. This exciting subject gives a scientific insight into how natural communities of animals and plants 'work', and also has many practical applications in a scientific approach to nature conservation and agriculture.

Who is the course for?

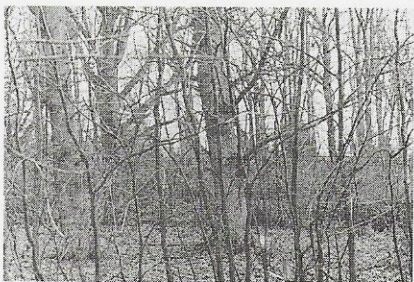
The course is for those who are interested in the biology of whole organisms. Its students usually include some people with an amateur or professional interest in nature conservation. It is also suitable for biology teachers who want to keep up to date in this area.



(a)



(b)



(c)

Geescroft wilderness at three dates in its development. (a) 1938; (b) 1957; (c) 1983.

Previous knowledge required

You need a basic knowledge of chemistry and maths equivalent to the Open University science foundation course. Some knowledge of physiology and the rudiments of animal and plant classification is recommended; you could get this from Units 1–3, 19–21 and 26–28 of the second-level course S203 *Biology: form and function*.

Contents

The course is divided into four sections on ecosystems, distribution and interactions of animals and plants, population ecology, and human beings and ecology. An experimental and scientific approach to the subject is emphasized. An important and highly popular part of the course is a practical project which you carry out at home under the supervision of a tutor. At the one-week residential school the enthusiastic and expert staff of the Field Studies Council at one of their Field Centres introduce the practical side of ecology.

See Section A of *How to Apply*

Evolution

Course code S365

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio and video cassettes Home kit Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

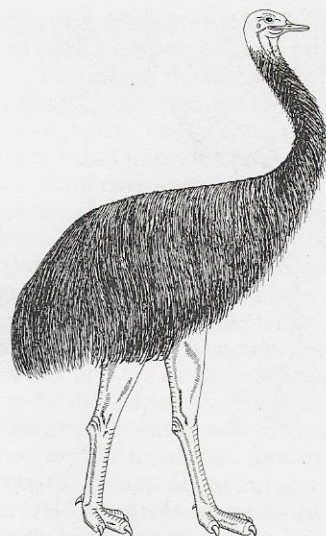
This course is a good general introduction to both the biological and the palaeontological aspects of evolution. It will be particularly rewarding to anyone who has an interest in biology or the Earth sciences.

Previous knowledge required

You must be able to interpret graphs and tables of data. You should have some biological knowledge and be familiar with some commonly used biological terms.

Contents

The course is divided into four parts. Part I investigates microevolution – how genetic changes within populations occur. Part II looks at the origin of species as studied by biologists and by Earth scientists. Part III examines macroevolution, the pattern of species origination and extinction



(a)



(b)



(c)



(d)

Various ratite birds (a) A reconstruction of the giant moa *Dinornis maximus*, based upon a single fragment of a limb bone found in New Zealand. (b) African ostrich *Struthio camelus*. (c) Australian emu *Dromaius novaehollandiae*. (d) Kiwi *Apteryx owenii*

shown by the fossil record. In Part IV case studies demonstrate how material from the earlier parts of the course can help to explain the origin of life systems, the invasion of the land, human evolution and evolution in the future.

The course will teach you to express models of evolutionary change in qualitative and quantitative form and to test these models with observed data; to plan and carry out practical investigations into the evolution of living and fossil organisms and analyse the significance of the results; and to synthesize and write up the results of practical studies and studies of the literature of evolutionary phenomena. The course includes a practical project.

See Section A of *How to Apply*

Organic chemistry

Course code S246

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio and video cassettes TV and radio programmes Computing Home kit Residential school Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

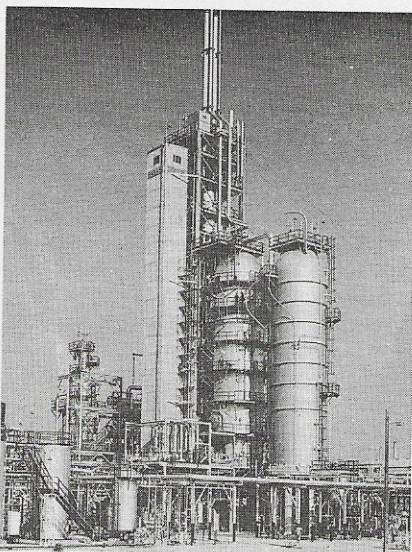
Organic chemistry is an important subject that has a great influence on our lives. Living things are made up of organic materials; many fabrics are made from synthetic organic compounds; the pharmaceutical industry is almost completely dependent upon organic chemicals; and organic compounds are burnt to provide heat and energy for transport.

Who is the course for?

This course gives an introduction to organic chemistry and will be of interest to all scientists, in particular science teachers and those working in the chemical industry.

Previous knowledge required

You should have a basic knowledge of chemistry at the level of the Open University's science foundation course (S102). Your Regional Enquiry Service (see page 90) will be able to give you guidance and perhaps arrange for you to look at some of the course materials before applying.



Industrial fractionating columns

Contents

The course is in five sections covering different aspects of organic chemistry. In each section the principal concepts and methods are established and applied to areas of particular relevance and interest.

We start by surveying the origins and sources of organic compounds and their three-dimensional structures. This is followed by a discussion of the isolation of compounds and the determination of their molecular structures by spectroscopic methods. This leads to a description of how atoms in molecules are bound together. We look at the reactions of organic molecules and how such reactions proceed at the molecular level. We demonstrate that with a few basic ideas we can explain many reactions occurring in the laboratory, the chemical industry and in living organisms. The course ends with a look at synthesis: the building of complex molecules from simpler and readily available materials.

See Section A of How to Apply

Inorganic chemistry: concepts and case studies

Course code S247

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes Home kit Residential school Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course will be of interest to teachers and laboratory workers. It will also provide a good basis for further study or for work that demands an understanding of the concepts of inorganic chemistry.

Previous knowledge required

You are expected to have some acquaintance with the Periodic Table, electronic structure, bonding, stoichiometry, equilibrium, enthalpy change, shapes of molecules and spectroscopy.

Contents

The course covers the reactions of metals, thermodynamics, the solid state, lattice energies, metal compounds, co-ordination chemistry,

symmetry, bonding, molecular orbital theory, periodic trends, spectroscopy and non-metals. Four case studies look at topics of scientific and social interest. They deal with the thermochemical generation of hydrogen, photovoltaic cells, the study of molecules in space using rotational spectroscopy and the effect of phosphorus chemistry on the environment.

See Section A of How to Apply

Matter in the Universe

Course code S256

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio and video cassettes TV programmes Computing (see page 4) Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

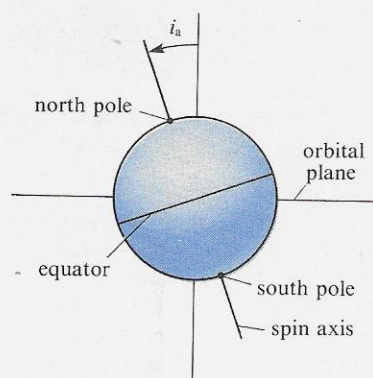
Could count towards a BA degree

Who is the course for?

This course is suitable for serious amateur astronomers, for school teachers who want to include astronomy in their teaching, and for those who intend to pursue astronomy to a higher level later. It is suitable for disabled students.

Previous knowledge required

You are expected to have a knowledge of physics and chemistry equivalent to A-level or the Open University science foundation course. Some mathematics is used and you need to be familiar with graphs and simple algebraic and chemical equations. You will be expected to perform quite a lot of calculations. Calculus is not used.



The axial inclination i_a

Contents

This course is an introduction to astronomy, with particular emphasis on the physical and chemical processes important to the evolution of galaxies, stars, planets and the medium between the stars. Also included are the physical and chemical techniques by means of which much of our knowledge about the cosmos has been obtained. Several topics which often appear in astronomy courses do not feature much, if at all, in this course, notably positional astronomy, how to make your own observations and the origin of the Universe.

See Section A of How to Apply

Physical chemistry: principles of chemical change

Course code S342

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate
Could count towards a BA degree

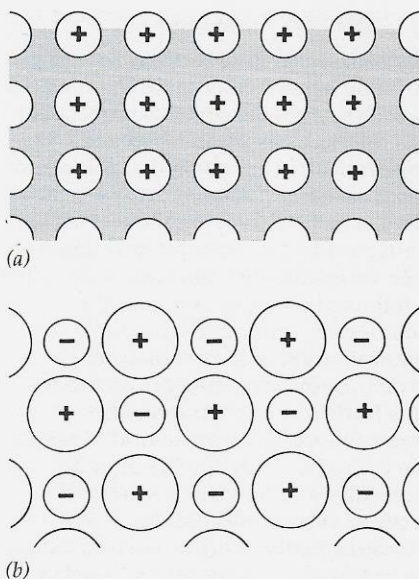
This course is broadly based in physical chemistry. Its main theme is an examination of the principles that govern whether, how and in what conditions substances will react with one another.

Who is the course for?

The course is suitable for both scientists and technologists, and in particular for science teachers and those working in the chemical industry.

Previous knowledge required

Although the subject matter of the course requires a quantitative approach, the only mathematical skill you are expected to have is elementary algebra. Other necessary mathematical skills are developed in the course. Undergraduate students of this course are advised to take S247 *Inorganic chemistry: concepts and case studies* before they attempt it, and if you have a limited background in chemistry it would be wise to look at material from that course before deciding whether to apply for S342.



*Idealized representation of the bonding in
(a) a metal and (b) a simple ionic solid*

Contents

The 'core' areas of physical chemistry covered are:

Chemical thermodynamics, which provides a set of precise criteria for predicting the equilibrium position for a given reaction.

Chemical kinetics, which governs the rate of a chemical reaction and gives information about the reaction mechanism which, in turn, can be used to suggest means of providing a faster reaction pathway (catalysis).

Surface chemistry, which examines the underlying reasons for the inherent catalytic activity of a variety of solid surfaces (heterogeneous catalysis) and also includes spectroscopic and diffraction techniques for studying surfaces.

Electrochemistry, in which both thermodynamic and kinetic principles can be applied to improve our understanding of electrochemical processes such as the operation of batteries and the electrolytic extraction of metals.

The course stresses the far-reaching practical importance of a knowledge of physical chemistry in areas as diverse as understanding the regulatory control of enzymes in the body, the potential for using coal as a base for the chemical and fuel industry, and the prevention of metallic corrosion.

See Section A of How to Apply

Organic chemistry: a synthesis approach

Course code S344

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Audio and video
cassettes Home kit Residential school
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course is about the application of organic chemistry to the preparation of target compounds – that is, organic synthesis. It does not take a narrow academic view of the subject but uses four case studies to present applications in areas of interest to the pharmaceutical and agrochemical industry.

Who is the course for?

The course will be of interest to those who want to extend or bring up to date their knowledge of advanced organic chemistry, particularly its application in the design of synthetic routes to a wide range of compounds.

Previous knowledge required

This is an advanced organic chemistry course which assumes a knowledge of basic organic chemistry to the level of the Open University course S246 *Organic chemistry*. If you have limited experience in chemistry you should look at some S246 course material before deciding whether to apply for S344.

Contents

The course covers the strategy of organic synthesis illustrated by a wide range of modern organic chemical reactions, with particular attention to the use of selective reactions. The use of a variety of powerful analytical techniques for the isolation and identification of pure compounds is an important part of the course, and for each technique the most advanced instruments are demonstrated in the videos.

The four case studies concentrate on peptide chemistry, insect pheromones, prostaglandins and beta-lactams. The home experiment and residential school projects are designed to enable you to experience something of the spirit of chemical research in the area of organic synthesis.

See Section A of How to Apply

Inorganic chemistry

Course code S343

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio and video cassettes
Model kit Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course is designed to bring you to the forefront of contemporary ideas and theories in inorganic chemistry and to show how they can provide the impetus for practical developments in the future.

Who is the course for?

This is a course for people who have an interest in molecular science, in particular science teachers and those working in the chemical industry.

Previous knowledge required

To get the most benefit from this course you should have reached the standard of chemistry of the courses S246 *Organic chemistry* and S247 *Inorganic chemistry: concepts and case studies* (described above).

Contents

The first half of the course explores the energetics, bonding, reactions and structures of transition metal compounds, and the use of nuclear magnetic resonance spectroscopy in investigation of their structures. The transition metals make up nearly one third of the known elements. They are important both in the chemical industry and in natural chemical processes such as enzyme catalysis.

This is followed by an investigation of areas at the forefront of inorganic chemistry: organometallic chemistry, spanning structure, bonding and preparation of organometallic compounds through to their use in organic synthesis; bioinorganic chemistry, concentrating on the role of metal atoms at the active site of the enzyme nitrogenase; solid state chemistry, which has recently seen the development of superconducting materials that operate close to normal temperatures; nuclear fuels, particularly the chemistry of the nuclear fuel cycle and nuclear fuel reprocessing. Laboratory techniques are studied at the residential school and with an interactive video programme.

See Section A of How to Apply

EARTH SCIENCES

Remote sensing

Study pack code PS670

Details of this pack are on page 30.

Geology

Course code S236

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Home kit Residential school Personal tutor
Assignments and exam

You will need

Maps

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This is the most basic Open University Earth science course, covering most areas of classical geology. It will be of interest to all those who want to extend their scientific expertise into this area, as well as to those who simply want to know more about the geological make-up of the British Isles. It is not recommended for anyone with serious visual disabilities, because of the detailed map

work, or with significantly impaired mobility, because of the fieldwork at the residential school.

Previous knowledge required

You are expected to have a background knowledge of modern Earth science and the concept of plate tectonics. If you have little or no previous scientific background you are strongly advised to study the Earth science part of the Open University science foundation course or similar material as preparation.

Contents

The course gives you a practical introduction to geology by making extensive use of home kit materials: minerals, rocks, fossils, a polarizing microscope and geological maps. There is also a week's residential school where the emphasis will again be on practical work but this time in the field. The course is divided into six sections:

Maps The interpretation of geological maps.

Earth materials The identification and description of minerals and rocks using the polarizing microscope.

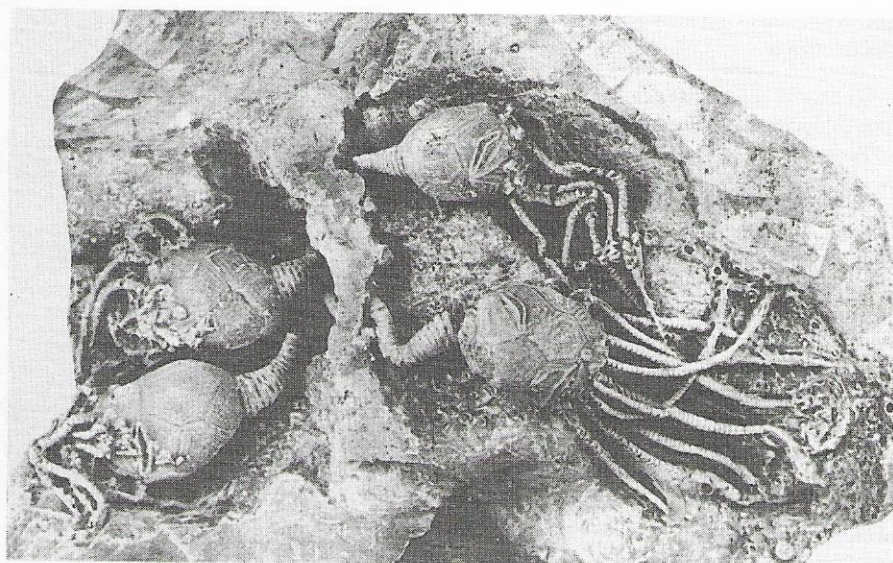
Internal processes The formation of igneous and metamorphic rocks and structural processes.

Surface processes Physical and chemical weathering processes, erosion and transport of material by water, wind and ice, deposition of sediments and diagenesis.

Fossils The main invertebrate fossil groups and the relationship between form and function; palaeoecology and fossilization processes.

Historical geology The geological history of Britain.

See Section A of How to Apply



Complete fossil crinoids, preserved by catastrophic burial

The Earth's physical resources

Course code S238

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

Possibly available for the last time in 1992

This course describes the availability, the economics and the methods of exploring for and extracting the Earth's physical resources.

Who is the course for?

The course is particularly suitable for those concerned with economic and applied geology, the exploitation, use and management of resources, environmental and pollution control and land reclamation.

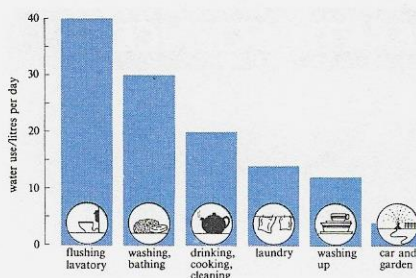
Previous knowledge required

You are expected to have a basic knowledge of science, particularly modern Earth science. If you have no geological background you are strongly advised to read the Earth science part of the Open University science foundation course, or equivalent material, as preparation. You will also need to be able to use graphs and perform simple calculations.

Contents

The course begins with an introduction to the concepts of resources and reserves, to economic principles controlling their use, to their economic history, to their role in industrial society and to the geological principles which govern the global distribution of resources. Then the 'core' of the course covers the formation and distribution of, the exploration for and the extraction and processing of the four main groups of resources. *Constructional and other bulk materials* deals with the raw materials used in the construction and chemical industries. *Ore deposits* is about the rocks from which metals are extracted. *Water resources* discusses all aspects of water resources. In *Energy resources* the main sections deal with coal, petroleum, nuclear power and renewable energy resources.

The last part of the course looks at predictions of the availability of and the demand for physical resources in



Average daily use of domestic water per person, England and Wales, 1981

the future, with special reference to the 'limits to growth' debate and the future demand for electric power in Britain.

See Section A of How to Apply

Oceanography

Course code S330

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Audio cassettes TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

The course gives a multidisciplinary introduction to the scientific study of the oceans.

Who is the course for?

The course is intended to be of wide interest, particularly to all types of mariners and aviators, marine engineers and technicians, oil company personnel, conservationists, geogra-

phers and anyone who is interested in the future of the planet. If you have a visual handicap you may have difficulty with some of the illustrative material.

Previous knowledge required

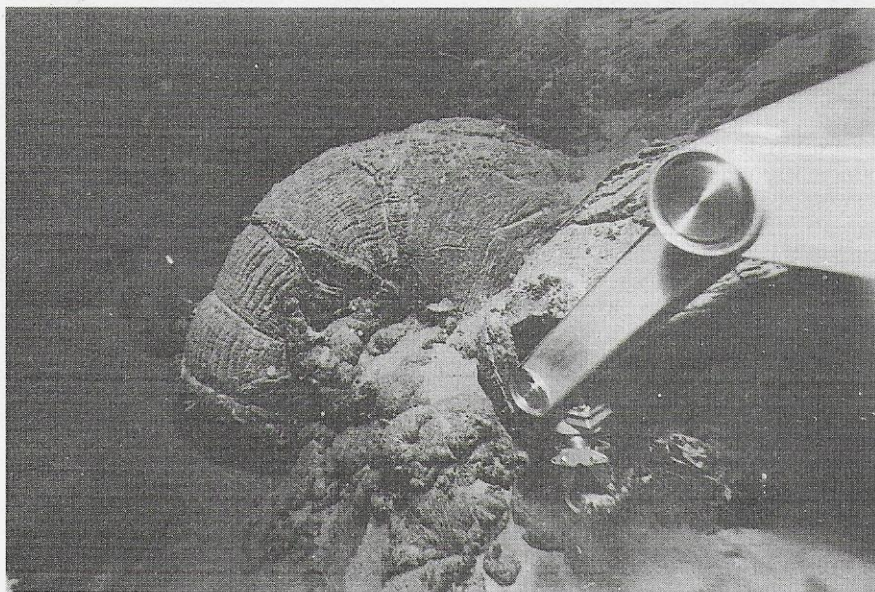
You are expected to have a knowledge of the sciences such as you would get from the Open University science foundation course, and to be confident with simple mathematics. It is also advisable to have good passes in two second-level science courses before attempting this course.

Contents

'Black smokers' on the East Pacific Rise and Mid-Atlantic Ridge pumping out plumes of sulphide particles at 350°C or more; the relationship between the greenhouse effect and rising sea-levels; great eddy systems in the ocean resembling atmospheric cyclones and anticyclones; subtle changes in the distribution of sea-surface temperature across the Pacific which not only spell disaster for Peruvian fisheries (El Niño) but are also related to the droughts and floods in other parts of the world; the sporadic pattern of sedimentation in the deep oceans; the global view of many ocean properties that satellite technology can provide – these are just some of the latest developments in the science of oceanography.

Oceanography is literally a 'whole Earth' science, for the oceans cover seventy per cent of our globe and interact continuously with the solid Earth beneath and the atmosphere above, while being the setting for a large part of the planet's biological production. The Earth sciences, physics, chemistry and biology are all prominent in the course because their relationships in the marine environment are the essence of oceanography.

See Section A of How to Apply



Submarine photograph showing sampling arm of submersible collecting lava from ocean floor

Understanding the continents: tectonic and thermal processes of the lithosphere

Course code S339

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Video cassettes Residential school Home kit Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This is a specialist course in 'hard rock' geology. It gives an insight into some of the areas which are the subject of current research in the Earth science community, with the general theme of crustal evolution in contrasting environments.



View from Blea Tarn, Cumbria, showing upper part of Borrowdale Volcanics

Who is the course for?

The course will be of particular interest to further education lecturers, or to anyone who has a serious interest in Earth sciences. It is not recommended for those with serious visual disabilities, because of the detailed microscope and map work, or with significantly impaired mobility, because of the fieldwork at the residential school.

Previous knowledge required

This course demands a sound knowledge of all basic and many advanced geological principles. Knowledge of the essentials of igneous and metamorphic rock formation processes is assumed, including an understanding of igneous and metamorphic rock classification and geochemistry (e.g. three-component phase diagrams), structural processes and geophysical techniques. You must also have a knowledge of the main features of plate-tectonic theory. (The Open University courses S236 *Geology* and S237 *The Earth: structure, composition and evolution* cover these areas.)

Contents

An introductory section sets the scene, revising and extending your knowledge of plate tectonic processes and using geophysics to build up a picture of the British lithosphere. Next we look at the Red Sea, the East African rift system and the Carboniferous Midland Valley of Scotland as examples of modern or ancient *extensional regimes*. A section on *subduction zone processes* concentrates on the Andean plate margin and the lower Palaeozoic of

Northern England, and the Alps and the Dalradian of Central Scotland are studied as examples of *collisional processes*. We draw together some of the techniques introduced earlier and apply them to a study of the Himalayas, and finally examine early / deep crustal processes.

See Section A of *How to Apply*

Evolution

Course code S365

Details of this course are on page 44.

PHYSICS

Discovering physics

Course code S271

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes Home kit Residential school Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

The course should be of interest both to non-scientists who want a fundamental understanding of physics and to scientists who want to refresh their understanding.

Previous knowledge required

You will need basic scientific and mathematical skills such as drawing and interpreting graphs and algebraic manipulation. Although the course does not use technically sophisticated mathematics, we do expect you to be able to use or adopt vector and calculus notation. This is particularly important early in the course and is the main cause of the difficulties of inexperienced students. The important physical ideas are generally introduced from scratch, but with the assumption that you have already met concepts such as energy, momentum, current, voltage, the atomic nature of matter, etc. If you do not have this physics background you will need to spend extra time mastering the basic concepts.

Contents

The course offers a broad survey of physics, from the basic ideas of mechanics to more recent theoretical developments and astrophysical speculations. Classical physics – primarily mechanics and electromagnetism – is covered in the first part of the course. The microscopic view of matter which dominates in the rest of the course is then introduced within the context of thermal physics. This is followed by Einstein's theory of special relativity. Then the development of atomic physics and quantum mechanics is traced chronologically, from the semi-classical atomic models introduced at the turn of the century to the notion of anti-particles. Lastly we turn to astrophysics, giving explanations of

the nature of white dwarfs, neutron stars and black holes.

See Section A of How to Apply

The physics of matter

Course code S272

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course will be of interest to all physics specialists and to other scientists and technologists who want to understand the behaviour of matter at a fundamental level. If you have impaired sight or manual co-ordination you may have difficulty with the experiments at the residential school.

Previous knowledge required

You are expected to have a basic knowledge of physics such as you would get from the Open University course S271 *Discovering physics*, and a knowledge of calculus equivalent to that provided by the mathematics foundation course or MS283 *An introduction to calculus* or TM282 *Modelling with mathematics: an introduction*.



Sir William Crookes, cartoon in *Vanity Fair*, 1903

Contents

Both the exotic and the everyday properties of matter are often taken for granted. But why is steel so much stronger than glass? Why do some metals (the superconductors) have the ability to conduct electricity with no resistance at all? Why does the viscosity of a gas increase with temperature, while that of a liquid decreases? How good a vacuum do you need in a thermos flask? And what is so special about silicon that has led to the silicon-chip revolution?

The course answers such questions from the point of view of the physicist. The emphasis is on the consequences of general principles (like Boltzmann's law or the exclusion principle). The mathematical models and order-of-magnitude estimates used in explaining the properties of matter provide a good introduction to the skills involved in combining physics with mathematics.

The course also shows the importance of experimental work in physics and teaches some essential experimental skills by means of television programmes and laboratory work at the residential school.

See Section A of How to Apply

Matter in the Universe

Course code S256

Details of this course are on page 45.

Images and information

Course code ST291

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes TV programmes
Home kit Optional computing Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course is an introduction to the theory and practice of modern imaging systems. Its theoretical basis is a fruitful approach to the analysis of imaging systems which has emerged in recent years – the so-called Fourier approach.

Who is the course for?

The course should be particularly useful to teachers of optics and related subjects at secondary and tertiary levels who want to keep their knowledge up

to date, and to technical and engineering staff working with imaging systems. It is not suitable if you have a severe visual handicap, and will be difficult if you have impaired manual dexterity.

Previous knowledge required

You will need facility with basic mathematics, particularly sines, cosines, logarithms and simple algebra, and especially with graphs, because the calculus and much of the algebra associated with this subject have been replaced by a simpler graphical approach. Nevertheless, the basic ideas are essentially mathematical and if you find mathematics unpalatable you may find this course hard going.

Contents

The first, larger part of the course concentrates on theory, covering such topics as photographic film as an example of a detector, diffraction, coherence, theory of lenses, image enhancement through spatial filtering and holography. The rest consists of case studies, ranging from astronomy to electron microscopy to medical imaging.

The course is being gradually revised over the next five years, the first stage of the new version to be completed in 1992. The content and aims of the course remain essentially unchanged but the teaching of parts which students have found difficult is being improved.

See Section A of How to Apply

Understanding space and time

Course code S354

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The ideas of relativity, though subtle, are not complicated and can be grasped without a wide knowledge of physics. Through these ideas, the nature of space and time can best be understood. This fundamental topic is of interest in its own right, and particularly to those who want a basis for the exact sciences, especially physics.

Previous knowledge required

A knowledge of basic calculus and traditional algebra is essential: you should not attempt this course without knowledge equivalent to the Open University course MS283 *An introduction to calculus*. The mathematics is used to express arguments in concise form. You are not expected to perform difficult calculations, but you do need some mathematical knowledge. You must also be familiar with basic concepts in mechanics and atomic physics and able to use them in physical arguments.

Contents

The course is in six sections:

- 1 Introduces Newtonian ideas about space, time and the dynamics of moving bodies.
- 2 Surveys Einstein's special theory of relativity. The theory of electromagnetism shows up the shortcomings of the Newtonian world view and led Einstein to his special theory.
- 3 Discusses the asymmetry of certain processes under reflections in space and time and the discovery of anti-matter.
- 4 Describes the changes which general relativity has made to our understanding of space and time, and tries to give meaning to the words 'curved spacetime'.
- 5 Uses these ideas in describing the expansion of the universe.
- 6 Discusses topics of a less analytical nature: the radio background radiation, which gives evidence for the 'Big Bang', 'black holes' and why the laws of particle physics are almost unaffected by reflection of time.

See Section A of How to Apply

Quantum mechanics

Course code SM355

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Audio and video cassettes Residential school Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

The course gives a thorough grounding in the principles, methods and philosophy of quantum theory and shows how the theory can lead to quantitative results particularly in the field of atomic structure.

Previous knowledge required

You are not expected to have any knowledge of quantum theory but you should have a good knowledge of basic concepts in physics, particularly those encountered in mechanics and electricity and magnetism (as in the Open University course S271 *Discovering physics*). You are strongly advised not to attempt this course unless you are proficient in the mathematical techniques of differentiation and integration including partial differentiation, and have a good acquaintance with vectors and complex numbers (as in MST204 *Mathematical models and methods*).

Contents

An account of the experimental evidence of the atomic nature of matter, the existence of electrons and the atomic nucleus and the wave nature of matter is followed by a mathematical description of wave motion and a grounding in the mathematical techniques used in wave mechanics.

The Schrodinger equation is introduced and applied to simple problems including the rotational and vibrational properties of diatomic molecules, and the emission of alpha particles in radioactive decay. The structure of the hydrogen atom is studied in detail.

Discussions of the wave particle duality, Heisenberg's uncertainty principle and the statistical nature of quantum theory lead to a thorough treatment of the postulates, mathematical structure and philosophy of the theory.

Perturbation theory is introduced, and the Pauli exclusion principle is enunciated. These are applied to the structure of the helium atom and other atoms, and the mechanism of bonding in molecules.

See Section A of How to Apply

Electromagnetism

Course code SMT356

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Video cassettes Day school Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course is for physicists, mathematicians and electrical and electronic engineers. If you have impaired sight

you may have difficulty in studying the video material.

Previous knowledge required

You must be familiar with differential and integral calculus, vectors and vector fields, and ideally with grad and curl operations. You must be well acquainted with basic Newtonian mechanics and able to tackle problems in three dimensions using vector notation. A knowledge of basic electricity and magnetism would be a distinct advantage. This is a course for which adequate preparation is essential.

Contents

The course develops the theory of electromagnetism from elementary principles based on observation to a full discussion of Maxwell's equations, which are then used to derive the properties of electromagnetic waves. The course is divided into five sections: mathematical preliminaries, electrostatics, magnetostatics, Maxwell's equations, electromagnetic waves. The language of vector analysis is developed in the first section and used extensively throughout the course.

The course attempts to offer in equal measure a basis for applications (e.g. in communications) and an introduction to a key part of our contemporary picture of the world.

See Section A of How to Apply

Electronic materials and devices

Course code T393

Details of this course are on page 78.

APPLIED MATHEMATICS COURSES

There are courses in the Applied Mathematics section (page 35) which may also be of interest to you, particularly MS284 *An introduction to calculus*, MST204 *Mathematical models and methods* and MST322 *Mathematical methods and fluid mechanics*.

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

CONTENTS

Interdisciplinary

54

Running the country
An introduction to information technology: social and technological issues
Statistics in society
Communication and education: language, media and information in education
Issues in women's studies
Professional judgment and decision-making

Applied social studies

55

Advanced Diploma in Criminology (Prison Studies)
Professional Diploma in Social Work with Deaf People

Economics

56

Introduction to economics
Economics and government policy

Geography

57

Changing Britain, changing world: geographical perspectives
Restructuring Britain

Government and politics

58

Democratic government and politics
Global politics

Psychology

59

Open Guides to Psychology
Introduction to psychology
Personality, development and learning
Biology: brain and behaviour
Social psychology: development, experience and behaviour in a social world
Cognitive psychology
Cognitive development: language and thinking from birth to adolescence

Social policy

62

Social problems and social welfare
Issues in deafness
Crime, justice and society
'Race', education and society
Policy-making in education

Sociology

64

Understanding modern societies
Exploring educational issues
Beliefs and ideologies
Work and society

SOCIAL SCIENCES

INTERDISCIPLINARY

Running the country

Course code D212

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required
None

The course includes

Study texts Set book Audio cassettes
TV and radio programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Running the country – how is it done? How is everything that goes into governing the country and producing goods and services organized? This course, new for 1992, examines the co-ordination of the complex web of social, political and economic activities in Britain today.

Who is the course for?

In the University's undergraduate programme this course provides a link between the social science foundation course and other second- and third-level social science courses. Both its approach to teaching and its subject matter have been designed to help you gradually develop your study skills, and it should appeal to anyone who wants to understand the social, political and economic framework in which we live.

Contents

This course should help you to understand how some of the main British industries, services and institutions, both public and private, are organized and run. Taking case studies such as the health service, the motor industry and the provision of financial services, we examine their structure, how they are organized and how much they have changed in recent decades. There is also a survey of British political, economic and social history since the end of the Second World War which establishes the broad context for the industries and institutions that the course examines in some detail. Theoretical material, particularly on the nature of markets and on bureaucratic and managerial hierarchies, is also introduced.

See Section A of How to Apply

An introduction to information technology: social and technological issues

Course code DT200

Full credit Second level

Fee £450

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required
None

The course includes

Study texts Set book Audio cassettes
TV and radio programmes Home kit
Computing Personal tutor
Assignments and exam

You will need

Home computer

Certification

Course certificate

Could count towards a BA degree

Home computing course – see page 4

Who is the course for?

The course is most suitable for those involved with human and technological aspects of the use of information technology (IT) systems. It will also be of interest to anyone who is concerned about questions such as the consequences of IT for employment and civil liberties, or whether we are moving into an 'information society'. If you want to gain some experience with home computers you will also find the course useful, although this is only a small part of it. It is unsuitable if you have any disability that prevents you from operating a home computer.

Previous knowledge required

It would be helpful to have some grounding in either technology or the social sciences. You need no experience of computing.



Contents

The course considers the main social and technological issues to do with the application and implementation of IT systems. It examines the assumptions underlying the technological development of these systems (including their limits and their potential) and gives you some understanding of how the social framework influences the introduction and use of IT, including such considerations as control and inequality.

These issues are considered within five application areas: the home; banking, finance and retailing; education; manufacturing; government.

Practice with the home computer is offered so that you can see the possibilities and limits of systems such as electronic mail, conferencing facilities and word-processing, database and spreadsheet packages. You are not expected to attempt any programming.

See Section A of How to Apply

Statistics in society

Course code MDST242

Details of this course are on page 38.

Communication and education: language, media and information in education

Course code EH207

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required
None

The course includes

Study texts Set books Audio cassettes
Radio and TV programmes Personal tutor
Assignments and exam

You will need

Ideally, use of a video recorder to record three TV programmes for closer examination and analysis

Certification

Course certificate

Could count towards a BA degree
Part of the Education diploma programme – see page 66

Possibly available for the last time in 1992

Who is the course for?

This course explores the topical issues of language, media and information with particular reference to education. It should appeal to teachers and parents as well as to people who have a

general interest in language, communication media and information studies.

Previous knowledge required

You are not expected to have any special knowledge.

Contents

Language and communication How does language compare with other communication systems such as body language?

Language variation Language varies according to region, social class, sex etc. How can we explain this variation?

Language and inequality Language reflects social divisions, but can it also help to perpetuate them? Can it be controlled by powerful groups?

The development of communication How do children first learn to speak, and do different kinds of home background affect their linguistic development?

Communication and teaching Can schools build on children's existing knowledge of language, or is there sometimes a conflict of interest? How can we evaluate attempts to improve adults' powers of communication?

Communication, media and society Different media affect both how we communicate and what is communicated. Are the media biased, and how can we assess their effectiveness?

Literacy and the print media We often see statistics about literacy but how do you measure whether someone is literate? Printed material conveys information through various forms: are some more effective than others?

Media for education How important are television, audio cassettes, computers etc. for contemporary education? Are they producing big changes in the curriculum, or are changes more apparent than real?

Social organization of communication How do teachers and other professionals obtain specialized information? How does curricular innovation spread to different schools and teachers?

Language, communication and the state What are the effects of national policies, both formal and informal, on communication in education?

See Section A of How to Apply

Issues in women's studies

Course code U207

Details of this course are on page 86.

Professional judgment and decision-making

Course code D300

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course is about how and how well professionals deal with individual cases and about how they could and (perhaps) should deal with them.

Who is the course for?

The course is intended for all professionals who deal with individuals and for everyone who is involved in or affected by their judgments and decisions. Although it uses medicine as its case study, it also includes material on other professions and you can select an area of personal interest for part of your work.

Previous knowledge required

If you have little numerical background you may find the course demanding, though it has been designed with you particularly in mind.

Contents

The course relies on its television programmes, so you must be able to watch them.

The course presents the debate in the form of a dialogue which examines competing views about the quality of professional judgments in individual cases. Errors in reasoning, inefficiencies in the use of resources and insufficient consideration of patients' values are the main 'diagnoses' considered. The 'treatments' include the adoption of formal (typically computer-based) judgment and decision aids (e.g. expert systems, decision analysis programs), more review by peers and the reform of the education of professionals so as to equip them with improved judgment and decision-making skills. The course sets interpersonal professional decision-making in its economic, ethical and legal contexts, and introduces the techniques and types of analysis you need for informed participation in discussions about the quality of professional judgment and the merits of decision support systems.

See Section A of How to Apply

APPLIED SOCIAL STUDIES

Advanced Diploma in Criminology (Prison Studies)

Diploma code D08

The Advanced Diploma in Criminology (Prison Studies) is specially designed for Prison Department personnel in England and Wales. The courses should also interest personnel from Scotland and Northern Ireland and those in allied professions such as probation and policing, as well as anyone who has a broad interest in the area of criminology. The diploma is in two parts and you must pass Part I before you can go on to Part II. Part I is the undergraduate course *Crime, justice and society* (D310), which is described on page 62 in the Social Policy section. Part II is *Doing prison research*, which is described here.

Page 87 tells you about registering for diplomas.

Doing prison research

Course code D803

Full credit Postgraduate level

Fee £450

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

See below

The course includes

Study texts Set books Personal tutor
Assignments and research project
Optional (strongly recommended) residential school

You will need

Library texts

Certification

Course certificate
Advanced Diploma in Criminology

Who is the course for?

Before you take this course you must pass the undergraduate third-level course D310 *Crime, justice and society*, including the optional Block 5A Research Studies in Criminal Justice: Prisons, which was available for the first time in 1990. If you took *Crime, justice and society* before 1990, you will have to study Block 5A separately before you can start *Doing prison research*. Please ask the D310 course manager, Ms H. Canneaux, in the Social Sciences Faculty for more information.

Contents

Section A (12 weeks) looks at prisons and penal systems, in particular prison histories: the origins and development of penalty; the structural and organizational features of the prison system; the social life of prisons; prisons for women; custodial measures for young people; criminal justice policy – custody and community corrections. This section provides a theoretical and subject-based background for the remaining 20 weeks of the course, which concentrate on preparing for and carrying out a small research project.

The other sections of the course are:

Section B: Developing research ideas

Section C: Methods of research

Section D: Research projects (you choose one of six)

Section E: Further reading for research project (you will need to use a library with a good selection of texts in your chosen field of research)

Section F: Fieldwork

The course's assessment has not yet been settled. There will probably be assignments marked by your tutor for Section A and assessment of draft stages of your research project for Sections B to E. Assessment of your final research report will take the place of a conventional examination.

We intend to offer an optional weekend residential school where you will be able to give further consideration to your research project proposal. The cost of this is not included in the course fee.

For further details please write to Ms J. Eustace, D803 Course Manager, Faculty of Social Sciences, The Open University, Milton Keynes MK7 6AA (telephone 0908 652595) or ask your Regional Enquiry Service (addresses on page 90).

See Section A of *How to Apply*

Professional Diploma in Social Work with Deaf People

Diploma code D09

The Professional Diploma in Social Work with Deaf People is recognized by the Central Council for Education and Training in Social Work as a post-qualifying diploma for social workers who want to specialize in working with deaf people. It is in two parts and you must pass Part A before you go on to Part B. Part A is the undergraduate second-level course D251 *Issues in deafness*, which is described on page 62 in the Social Policy section. Part B is *Social work with deaf people*, which is described here.

Page 87 tells you about registering for diplomas.

Social work with deaf people

Course code D601

Full credit Professional level

Fee: see page 87

Study period

Feb–Oct 1992 About 10–12 hours a week and a 60-day placement

Subject knowledge required

See below

The course includes

Study texts Residential school Personal tutor
Research project

Assessed practice placement and exam

Certification

Course certificate

Professional Diploma in Social Work with Deaf People

Who is the course for?

This course is for qualified social workers who want to specialize in working with deaf people. There are only thirty places on the course each year. You must hold both a CQSW or equivalent and CACDP Stage II or SASLI Stage II (qualification in sign language skills). You must also have passed the Part A course *Issues in deafness*.

Contents

This course offers study texts, a practice placement, a research project and a residential school, and is designed to develop skills in independent study and critical analysis. The course begins by analysing the day-to-day practice of social work with deaf people. It builds on issues raised in the first part of the diploma, examining them in the context of social work practice, and explores the theory on which social work is based. Then you undertake an assessed sixty-day placement outside your sponsoring agency, supervised by an accredited practice teacher. The practical and theoretical work is consolidated in a research project of your own choice, guided by a tutor.

There is a one-week residential school in August which concentrates on communication skills for social work with deaf people and gives you an opportunity to discuss questions raised in the course.

Because of the nature of the placements to be arranged for students of this course, the University will have to undertake a routine criminal records check. If you apply for the course you will be deemed, by virtue of applying, to have agreed to this being done. This statement is at variance with the general statement in the How to Apply section about giving information to third parties.

See Section A of *How to Apply*

Diploma in Health and Social Welfare

The University is introducing a Diploma in Health and Social Welfare which may also be of interest to you. If you would like the Health and Social Welfare brochure please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

ECONOMICS

Introduction to economics

Course code D210

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Audio and video cassettes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course will be of interest to anyone who wants a comprehensive and comprehensible insight into the economic problems of our age and how economists tackle them. It is suitable whether you choose to take it without any intention of studying more economics or whether you mean to go further into the subject afterwards.

Contents

The course introduces economics in two senses. First it teaches about the economy, giving a general introduction to the British economy and its international position. The modern problems shown up by the great changes that are taking place are a recurring theme. Second, it teaches the basic theories that economists use to analyse how the economy works. It explains the nature of theories such as Keynesianism and monetarism.

The topics covered include cyclical patterns in economic activity; growth and de-industrialization; international trade; demand and supply analysis; theories of the firm; income and wealth; unemployment; macro policies; inflation; exchange rate policy; supply side policy.

See Section A of *How to Apply*

Economics and government policy

Course code D345

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Since 1979 the Government has brought in a series of controversial economic policies. Behind the personalities and the party-political jousting, what are the real economic questions, affecting us all, that have to be resolved? This course in applied economics, regularly brought up to date, shows you how basic economic theory can be used to analyse practical problems. Assignments set for the course have been concerned with, for example, changes in public expenditure and the withdrawal of publicly financed services, the poll tax, the privatization of the electricity supply industry and the planned reforms of the National Health Service.

Who is the course for?

This course will be particularly valuable to you if you would like to strengthen and extend your grasp of how economic analysis can be applied, or to complement other courses or experience relating to government policy.

If you have a visual impairment you should seek advice from the course manager before registering.

Previous knowledge required

If you have not completed an introductory economics course such as D210 *Introduction to economics*, write to The D345 Course Manager, Faculty of Social Sciences, The Open University, Milton Keynes MK7 6AA for advice. Please list any economics courses you have studied.

Contents

The course is in four sections, followed by a conclusion and revision:
Behind the budget The budget; changes in budgetary policy; theories and arguments; central and local government.
Taxation The British tax system; the reform of personal taxation; what should have been done about the rates?
Industry Promoting competition; ownership and regulation; private sector investment; agriculture.
Welfare Cash benefits; the redistribution of incomes; health care.

See Section A of How to Apply

GEOGRAPHY

Changing Britain, changing world: geographical perspectives

Course code D205

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books TV programmes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course demonstrates the value of human geography for an understanding of important problems ranging from inner city decay, environmental pollution and industrial change to regional inequalities and international tensions. It also shows how much geography has changed in the last twenty or so years and how central it has become to an understanding of changes taking place in society.

Who is the course for?

The course is suitable for everyone who wants to bring their view of geography and its contribution to social issues up to date.

Previous knowledge required

You are not expected to have any special knowledge.



The environmental legacy of nineteenth-century growth

Contents

We start by looking at some problems of contemporary Britain and placing them in a world context. From these discussions the main themes of the course emerge: the relationships between environment, economy and society, and the influences of regional and international differences on contemporary change.

The first section investigates the use of resources and industrial and social geography. It also raises questions about how we view the environment, land ownership, international politics and the Third World.

The second section examines how places develop their distinctive characters and how their fortunes can change over time. We take an international view to show how these changing fortunes are often linked to changing relationships between places. This is illustrated by case studies set in Britain, Brazil, the Sahel and the Islamic world.

The last section analyses more general ways in which geographical variations between places and the physical environment impinge on the changing character of Britain and the wider world. Regional differences can be a cause of separatist movements. International differences within the EC have made it difficult to get together in a genuine way. And processes found in nature often combine with social change to bring unexpected and unwanted environmental outcomes. These analyses lead us into more general ideas about the role of human geography within the social sciences.

See Section A of How to Apply

Restructuring Britain

Course code D314

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course is for anyone who is interested in studying the important changes that have reshaped Britain and its international position during the last twenty-five years. It asks whether a significant restructuring is under way and attempts to explain the changes that have taken place.

Previous knowledge required

It would be to your advantage to have taken D205 *Changing Britain, changing world: geographical perspectives*, D211 *Social problems and social welfare* or D202 *Urban change and conflict* (last presented in 1988).

Contents

Manufacturing and employment have suffered a sharp decline and Britain's share of world exports has fallen steeply as imports have risen. Meanwhile, the service sector has grown rapidly and it has been suggested that Britain is now a 'post-industrial' society. There have also been suggestions that the traditional working class is disappearing and that Britain is becoming a middle-class society. There is a widening gulf between the affluent south-east and the rest of the country, between the poor inner cities and the wealthy suburbs. Are these 'two nations' reflected in an increasing social and geographical division in party politics and voting? And is the post-war political consensus on housing, employment and the welfare state dead? These interpretations are open to question, and the course should enable you to examine them critically.

The course has three sections, on economy, society, and politics and the state. There are three main course books and three readers, allowing you to read and assess some of the important articles and debates for yourself. There is also a course guide, a skills guide and three study guides. The fact that change is geographically uneven is to the fore throughout the course.

See Section A of How to Apply

ENVIRONMENTAL EDUCATION

There are courses in the Environmental Education section which may also be of interest to you (see page 27).

GOVERNMENT AND POLITICS

Democratic government and politics

Course code D308

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Party politics may sometimes seem jaded, yet 'democracy' remains an essential element in our society's image of itself. But can democracy survive in a world of high technology, high unemployment and powerful mass media?

Who is the course for?

The course is for those who want to formulate their own reasoned view of what constitutes 'democracy', and to understand why this complex yet popular idea is today as controversial and alive as at any time in its long history.

Previous knowledge required

You are expected to have a rudimentary grasp of how the main political institutions work; the course contains no introductory explanation of elections, Parliament or the Civil Service, although the role of such institutions will certainly be discussed. You are expected to have some notion of what is involved in pluralist and Marxist approaches to the study of government and politics. These will be analysed and elaborated, but not at a beginner's level.

Contents

The course deals with a series of questions fundamental to the kind of society we live in. What is democracy? How has it arisen? How can it be maintained and developed? The themes of 'democracy', 'autonomy', 'freedom' and 'conflict' are traced through a selection of political systems, movements and groups. The course offers a good comparative understanding of the political and governmental systems of the USA and France and also examines the growing importance of political phenomena which manifest themselves at the global level.

Significant changes have been taking place in many people's attitudes to what constitutes worthwhile involvement in politics and public affairs. We analyse these changes by examining developments in political parties, the growth of international movements and experiments in industrial democracy.

See Section A of How to Apply

Global politics

Course code D312

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set book Audio cassettes
Residential school Personal tutor
Assignments and exam

Certification

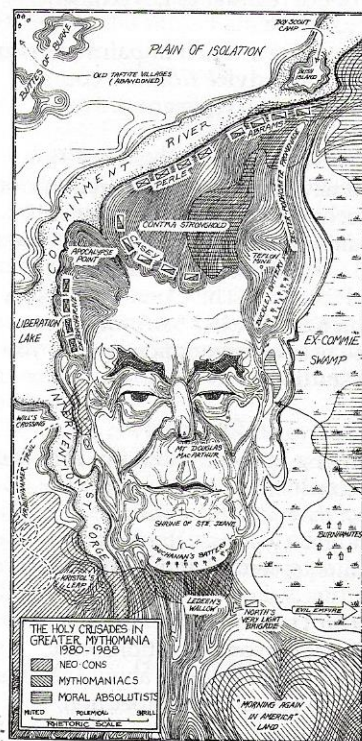
Course certificate

Could count towards a BA degree

Each day we are reminded that Britain is part of a broader world society that offers us all manner of opportunities and can exact heavy costs. Processes of 'globalization' have both good and bad effects and act selectively on different aspects of our lives.

Who is the course for?

The course should appeal to you if you are interested in contemporary politics, political economy, international affairs and the Third World.



The Reagan Doctrine (cartoon from the New York Times)

Previous knowledge required

You should have a good grasp of current affairs and an understanding of social science theories, as the course looks at 'global politics' in a theoretical way.

Contents

The course examines the extent to which political processes have become 'globalized' and asks what are the forces underlying these developments. The question is approached in four ways. We examine the nature and origins of the 'Second Cold War' and how far this acts as a critical division within the international order. Then we look at the forms and effects of technological development, which often seem to act as an autonomous force in world affairs and are increasingly beyond the control of individual countries. Next we analyse the world economy and the global forces that influence countries' capacities and material fortune.

Finally, we look at the political and ideological content of these forces and examine the potential role of unifying forces like the spread of international conceptions of human rights and the nature of movements as diverse as Islam and the Greens. You are encouraged to develop your own interests and will participate in a research project of your own choosing. You will have the use of library facilities at the residential school to help you with this.

See Section A of How to Apply

PSYCHOLOGY

Open Guides to Psychology

Book codes PD561 to PD568

Fee PD561-567 £9.99 each

Subject knowledge required
None

Each pack includes
Book

This series provides course materials for psychology students. Published in book form, they summarize the essential facts and provide a framework to help you organize revision. The books are obtainable direct from the Open University or from bookshops.

For many psychological training and research courses a full degree in psychology or a pass in the British Psychological Society's qualifying examination in psychology is required. For other careers such as teaching, social work, vocational guidance, speech therapy, nursing and counselling, courses covering aspects of

psychology are part of the professional training syllabus. You should find the Open Guides to Psychology helpful in your examination preparation if you are studying at degree or professional training level.

Packs PD562, PD563, PD564 and PD565 are all part of the course D309 *Cognitive psychology*. If you register as a student for this course, you will receive them as part of your course material.

PD561 Basic cognitive processes

This covers the basic cognitive processes of perception, attention, learning and memory which are the backbone of most psychology syllabuses.

PD562 Memory: a cognitive approach

This provides an up-to-date, detailed treatment of important topics in memory research including everyday memory, working memory and encoding and retrieval.

PD563 Language understanding: a cognitive approach

The topics covered include linguistic theories, experimental studies and computer models which attempt to simulate human language abilities.

PD564 Problem-solving: a cognitive approach

This introduces research methods for investigating human problem-solving, including experiments, verbal protocols and computer models which attempt to simulate human problem-solving abilities.

PD565 Perception and representation: a cognitive approach

This emphasizes the importance of mental representations of knowledge for recognizing and categorizing objects. It also describes computer models which attempt to simulate human perceptual abilities.

PD566 Biological foundations of behaviour

This is a comprehensive account of biological and physiological theories of behaviour. As well as giving details about nerve cells and the nervous system, it discusses how these relate to psychological theories of perception, learning, memory and motivation and the socio-biological approach.

PD567 Designing and reporting experiments

This offers invaluable advice about how to prepare reports of experiments you do for the practical part of psychology courses. This book makes a good companion to PD568 *Learning to use statistical tests in psychology*.

PD568 Learning to use statistical tests in psychology

This summarizes the principles of experimental design and provides step-by-step instructions for selecting and

calculating the statistical tests used for analysing psychological data. This book makes a good companion to PD567 *Designing and reporting experiments*.

See Section B of How to Apply

Introduction to psychology

Course code DSE202

Full credit Second level

Fee £425

Study period

Feb-Oct 1992 About 12-15 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
BPS approved - see page 61

This course provides an introduction to psychology, dealing with its subject matter, methods and uses.

Who is the course for?

The course is suitable for everyone who has an interest in this area, and you will find it particularly useful if psychology is relevant to your work. Psychological concepts and methods are applicable to a wide variety of professions, including health and social welfare, industry and education. The course will help you to understand these concepts and methods, and to appreciate the ways in which they have been applied to real problems. This is a required course in the set recognized by the British Psychological Society.

Previous knowledge required

You need no special knowledge or skills; they will be provided by the course.

Contents

The course is presented in two volumes: chapters 1-9 in Volume 1 and 10-17 in Volume 2. The chapters are grouped into eight parts, each dealing with a different set of topics and approaches. These include the processes such as learning, perception, memory and attention which underlie human behaviour; people's experiences, both as individuals and as members of social groups; how behaviour and experience develop and change from childhood throughout adult life; the special uses of psychology in fields such as clinical applications.

See Section A of How to Apply

Personality, development and learning

Course code E206

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Part of the Education diploma programme –
see page 66

BPS approved – see page 61

This course gives an introduction to important ideas in the psychology of education, and explores their implications for the way we lead our lives and educate our children.

Who is the course for?

The course will be suitable for anyone who has a general interest in psychology, non-teachers and teachers alike.

Previous knowledge required

You are not expected to have any special knowledge.

Contents

The course is divided into four blocks of work. The first investigates the nature of development, particularly in the early years, and examines closely the influential ideas of Jean Piaget. The practical implications are explored by asking about the educational relevance of children's play and the effects on emotional and intellectual development of different patterns of parental care. The second block examines how we learn and remember, and relates this to the acquisition of our native tongue, learning to read and understanding mathematical concepts. Block 3 is an exploration of personality and the self – how they can be described, how they develop and what implications they have for other facets of our lives. Although the course as a whole is to do with practical concerns, the last block considers some contemporary educational questions and assesses the usefulness of psychology for understanding them – literacy, the education of black children and of girls, the effectiveness of schools, children with special educational needs and the significance of early intervention.

See Section A of How to Apply

Biology: brain and behaviour

Course code SD202

Details of this course are on page 42.

Social psychology: development, experience and behaviour in a social world

Course code D307

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio and video
cassettes* Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

BPS approved – see page 61

Who is the course for?

This course is designed both for specialist psychologists and for those whose interests are in social science, education, arts and humanities.

Previous knowledge required

This is a third-level course and will be considerably more approachable if you have studied some psychology or sociology before.

Contents

The intention of the course is to promote an understanding of social behaviour and of personal experience in the contemporary social world. Various theories are discussed in their historical and political contexts and related to assumptions about the nature of man and society. The course teaches research methods and uses practical project work to give you an opportunity to develop research skills and a critical awareness of methodological problems.

The early part of the course is about the chronological development of individuals. We explore the functions of families and discuss theories of socialization and language acquisition. The progress of personal relationships, the nature of consciousness and the way our experience changes through the life-cycle relate the course materials to your personal experience. There is then a shift away from an individualistic approach. Attempts to generalize about people's attitudes and views of

the world are used to introduce a study of political socialization of young adults and their decisions about how to vote in a general election. The experience and influence of group membership, intergroup relationships and crowd behaviour are examined and lead into a discussion of social movements and change.

*The audio and video cassettes are needed only for certain project options. If you have no access to cassette players you can choose other projects.

See Section A of How to Apply

Cognitive psychology

Course code D309

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set books Residential school
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

BPS approved – see page 61

This course acquaints you with the main theories and methods of cognitive psychology. It covers the higher mental processes, particularly the ways in which knowledge is acquired, stored and used, and explains how theories and findings in cognitive psychology can help us to understand mental activities in everyday life.

Who is the course for?

The course should appeal to you if you have already studied an introductory psychology course such as DSE202 *Introduction to psychology* (or the course it replaced, DS262) and you want to extend or bring up to date your knowledge of current work in cognitive psychology.

Previous knowledge required

We strongly advise you to have studied DS262, DSE202 or PD561 *Basic cognitive processes* in the Open Guides to Psychology series before taking this course.

Contents

The course covers the main areas of cognitive psychology: perception, memory, language and problem-solving. Part of the course materials is a set of four books: *Memory: a cognitive approach*, *Language understanding: a cognitive approach*, *Problem-solving: a cognitive approach*, *Perception and representation: a cognitive approach*. These books are sold separately as

study packs PD562, PD563, PD564, and PD565 (see Open Guides to Psychology). Three main methods of investigation are introduced: experimental projects, the analysis of self-reports and the use of computer models. Some of the projects are carried out at day schools and at residential school where computers will be available for you to try out your own computer and experimental projects.

See Section A of How to Apply

Cognitive development: language and thinking from birth to adolescence

Course code E362

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

You will need

The help of at least 2 children aged between 4 and 11

Certification

Course certificate
Could count towards a BA degree
BPS approved – see below

The theme of this course is the cognitive development (language, perception, thought) of the child from birth to 16 years. It describes the main cognitive changes in the individual's development and evaluates the theoretical approaches used to study them.

Who is the course for?

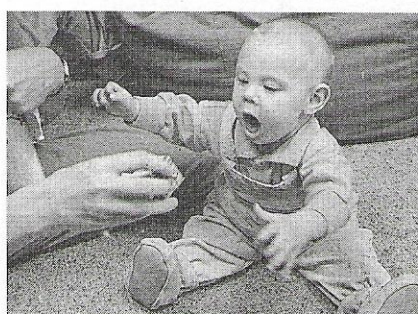
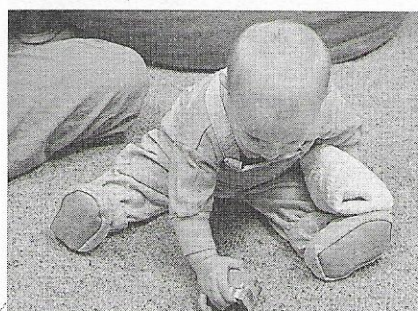
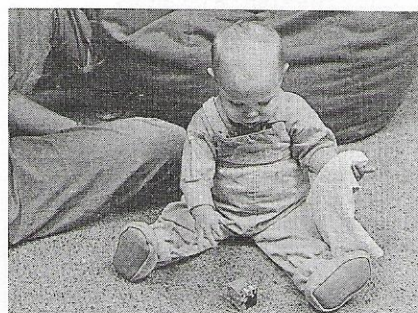
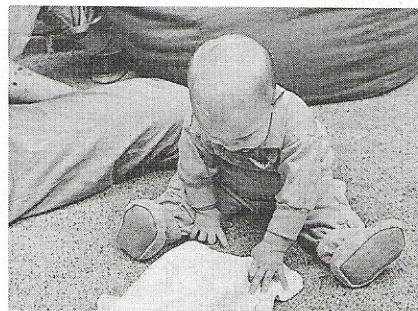
The course is suitable for anyone who has a general interest in the study of psychology, especially parents, school teachers, social workers, probation officers, health visitors and those concerned with child guidance.

Previous knowledge required

There are no formal requirements, but a basic understanding of statistics used in the social sciences, psychological research methods and Piagetian concepts would be helpful.

Contents

The four sections of the course cover *Early development* (mainly the first eighteen months of life, including the biological and cultural context, perception and learning, cognitive development and social interaction), *Language development* (how children acquire language), *Cognitive development to*



adolescence (the contribution of the theories of Piaget, Bruner and Vygotsky and the influence of social contexts on development) and *Cognitive development in adolescence* (changes in cognition from 12 to 16 years and beyond, with reference to theoretical and practical educational issues).

A central part of the course is a research project in which you gather data from a few (usually two to six) children between the ages of 4 and 11. This is submitted for 'pooling' and preliminary analysis, and then returned for further analysis and report.

See Section A of How to Apply

BRITISH PSYCHOLOGICAL SOCIETY

BPS graduate membership

The British Psychological Society recognizes the Open University BA Honours degree as conferring eligibility for graduate membership if the degree includes specified combinations of certain courses. The following courses being presented in 1992 are approved by the BPS:

Page	Course
59	<i>Introduction to psychology</i> (DSE202)
60	<i>Personality, development and learning</i> (E206)
42	<i>Biology: brain and behaviour</i> (SD202)
60	<i>Social psychology: development, experience and behaviour in the social world</i> (D307)
60	<i>Cognitive psychology</i> (D309)
61	<i>Cognitive development: language and thinking from birth to adolescence</i> (E362)

The following discontinued courses can also be counted: D303, D305, DE304, DS261, DS262, E201, E281, E341, SD286, SDT286.

If you would like more information, please ask the Central Enquiry Service (0908 653231) for Recognition Information Leaflet 3.1.

BPS conversion certificates

The British Psychological Society also recognizes DSE202 *Introduction to psychology*, E206 *Personality, development and learning*, D307 *Social psychology: development, experience and behaviour in the social world*, and D309 *Cognitive psychology* as courses which can contribute to certificates for converting honours or master's degrees in other subjects into psychology degrees recognized by the BPS. The number of courses you need to take depends on the proportion of psychology courses in your original degree.

SOCIAL POLICY

Social problems and social welfare

Course code D211

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Course reader Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Part of the Health and Social Welfare
diploma programme – see page 63

Who is the course for?

This is an introductory course for anyone who is interested in examining how social problems in British society emerge and are defined. Why is it that some issues are seen as social problems, when others remain invisible? Should people make more effort to look after themselves, or should we expect the welfare state to do more for those in need? The nature of social intervention and its implications are examined. The course should also appeal to those who are working in the social services in either a voluntary or paid capacity.

Previous knowledge required

You are not expected to have any detailed knowledge, though some background in the social sciences would be an advantage.

Contents

The course considers in particular how social definitions and intervention impinge on, for example, birth, childhood, adolescence and old age. The nature of the contemporary family is explored. One important form of social intervention is social work; this is placed in its historical context and we examine the nature of its techniques of intervention. The practical problems of social work and of social intervention in contemporary conditions of fiscal distress are also analysed. Any discussion of Britain's social problems inevitably leads to an examination of the wider debate about Britain's economic decline. This and the apparently inexorable increase in crime and disorder are the principal topics of the concluding part of the course.

See Section A of How to Apply

Issues in deafness

Course code D251

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Video cassettes
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Part of the Professional Diploma in Social
Work with Deaf People – see page 56
Part of the Health and Social Welfare
diploma programme – see page 63

This is a study of deaf people, their community and their language. It examines issues in the areas of social policy and psychology from the point of view of deaf people and the social agencies they meet.

Who is the course for?

The course should be of interest to two different but related groups:

- Deaf people and families with deaf members; members of disability groups and equal opportunities and minority rights groups.
- Professionals concerned with deafness, including social workers; teachers of the deaf; prison, probation and health service workers; interpreters; speech therapists; psychologists and linguistic specialists.

The visual nature of much of the course material could present difficulties for students with visual impairment. Since the course may be of particular interest to some such students, you are advised to contact the course team before deciding whether to apply.

Previous knowledge required

Some knowledge of the social sciences would be helpful but is not necessary.

Contents

The introduction to the course uses videos and printed text to show the lives of deaf people. This leads to a study of the structure and use of sign language, which suggests a new way of looking at some topics in linguistics. We then examine the influence of the hearing world upon the lives of deaf people through the institutions of education, social welfare and the law. The third part of the course looks at the different implications of considering deaf people as a linguistic minority or as a disabled group and considers deaf people's experience as a minority group within the dominant culture. Finally, we consider the increasing demands by deaf people for recogni-

tion and the implications of equal opportunities policies.

See Section A of How to Apply

Health and Social Welfare courses and study packs

There are courses and study packs in the Health and Social Welfare brochure which may also be of interest to you (see page 63). If you would like that brochure, please ring the Central Enquiry Service (0908 653231).

Crime, justice and society

Course code D310

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate
Part of the Advanced Diploma in Criminology
– see page 55
Could count towards a BA degree

This course introduces controversies and debates about crime, law and criminal justice in contemporary British society. You can study it either as a free-standing course or as part of the Advanced Diploma in Criminology (Prison Studies).

Who is the course for?

Although it does not provide vocational training, the course should be of interest to people in any field of activity, professional or voluntary, related to the criminal justice system or the social services, and to anyone who has a general interest in crime and society.

Previous knowledge required

You would find it helpful to have had some study or practical experience in the social sciences, particularly in the fields of sociology, psychology, sociological studies or social work.

Contents

The first part of the course considers the quality of media representations of crime, the extent, the causes and the fear of crime and how it can most effectively be controlled. Then comes a discussion of changing patterns of crime and transformations in the law and justice system in Britain from the eighteenth to the mid-twentieth century.

We bring this history up to date by

exploring the powers and procedures of the police, courts and prisons as they affect adults and juveniles in the late 1980s. Important questions such as police accountability, judicial impartiality, the effects of imprisonment and the relative merits of the English and Scottish systems of justice are discussed.

We then examine a wide variety of sociological and psychological theories of crime and survey recent developments in social explanations of crime and the law. In the last part of the course you can choose to study either research methods in criminology (Block 5) or penology (Block 5A). If you intend to go on to Part II of the Advanced Diploma in Criminology (Prison Studies) you must study Block 5A.

See Section A of How to Apply

'Race', education and society

Course code ED356
Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Part of the Education diploma programme –
see page 66

This course analyses the relationship between racial inequalities and other types of social division in education, such as those based on class and gender, and between racial inequalities in education and in other areas of social life, especially employment and social welfare. It draws out underlying theoretical themes and relates them to policy and practice.

Who is the course for?

The course tries to balance the broad intellectual demands of an honours-level course with the particular needs of professionals in education and related fields. It would be helpful to have knowledge or professional experience in either education or the social sciences.

Course content

We begin with a critical survey of notions of 'race' and racism, discussing questions of racism and education in relation to wider debates about the political, economic and cultural context of education.

COURSES AND STUDY PACKS IN HEALTH AND SOCIAL WELFARE

The University offers a variety of opportunities for study in health and social welfare, from introductory study packs to courses in the Health and Social Welfare Diploma programme and the University's BA degree programme. The materials are suitable both for professionals and for anyone else who has an interest in this area.

Health and social welfare

Community care (*course, K662*)
Roles and relationships (*course, K663*)
Social problems and social welfare (*course, D211*)
Managing voluntary and non-profit enterprises (*course, B789*)

Children and young people

Pregnancy and birth (*study pack, P960*)
Living with babies and toddlers (*study pack, P961*)
The pre-school child (*study pack, P912*)
Working with under-fives (*study pack, PE635*)
Childhood 5–10 (*study pack, P913*)
Parents and teenagers (*study pack, P914*)
Child abuse and neglect: an introduction (*study pack, P554*)
The Children Act 1989: putting it into practice (*study pack, P558*)
Caring for children and young people (*study pack, P653*)
Working with children and young people (*study pack and course, K254*)

Health and health care

Coronary heart disease: reducing the risk (*study pack, P575*)
Drug use and misuse (*study pack, P576*)
Reducing the risk of cancers (*study pack, P578*)
Health choices (*study pack, P921*)
Healthy eating (*study pack, P964*)
A systematic approach to nursing care: an introduction (*study pack, P553*)
Health and disease (*course, U205*)
The construction of health and well-being (*course, K660*)
Managing health services (*course, B782*)
Death and dying (*course, K669*)

Life choices

Work choices (*study pack, P942*)

Disability studies

Disability – changing practice (*study pack, K665X*)
Disability – identity, sexuality and relationships (*study pack, K665Y*)
Mental handicap: patterns for living (*study pack, P555*)
Patterns for living: working together (*study pack, P555M*)
Mental handicap: changing perspectives (*study pack and course, K668*)
Learning for all (*course, E242*)
Issues in deafness (*course, D251*)

Ageing

Working with older people (*study pack, P654*)
Mental health problems in old age (*study pack, P577*)

If you would like to know more about these packs and courses and have not already got the Health and Social Welfare brochure, please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

Part 1 *Racism in education* analyses national, local and school-level policies and processes of change in the area of multicultural and anti-racist education. We discuss the assumptions and approaches of different agents in the policy process; accounts of community involvement; assessments of what has been achieved; and the scope of personal, professional and institutional change.

Part 2 *Culture, identity and difference* looks at questions about the content of schooling in the light of the presence of black minorities, and the changing forms of majority and minority cultural identities.

Part 3 *Racism, inequality and education* introduces the issue of racial inequality in British society. We identify the main forms of racial inequality in education and set them in the context of racial inequalities in other types of institution, especially in the spheres of employment, youth training, welfare and the law. We end with a review of the main themes and consider the possibilities and limits of educational attempts to challenge racism.

Although we look mainly at Asian and Afro-Caribbean minority communities, we make comparisons with the position of other ethnic minorities. We also discuss the formation of the dominant white culture, and the values and assumptions that have informed important educational developments.

See Section A of How to Apply

Policy-making in education

Course code E333

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV and radio programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Part of the Education diploma programme –
see page 66

Possibly available for the last time in 1992

This course, by considering educational policies and the historical, social and political context in which they are made, should enable you to analyse and understand how education policy has evolved.

Who is the course for?

The course is for teachers, educational administrators or others with an interest in education who have either

taken other Open University education courses or studied general policy-making in the social sciences and now want to concentrate on education.

Previous knowledge required

You are not expected to have any special knowledge.

Contents

The course is in two parts: Block A is about policy-making in general and Block B looks at examples of educational policy.

Block A: *Introducing educational policy* discusses some of the approaches that shape the study of educational policy. *The policy-makers* introduces the two main groups of policy-makers: central government through the DES and civil servants, and local government through LEAs and teachers. We examine the relationship between the DES and other government departments (Training Agency, Treasury).

Block B: *Industry, vocationalism and employers' needs* considers in detail the recent developments in post-16 education and training, the growth of youth unemployment and the increasing importance of the Training Agency. *Race, gender and educational policy-making* deals with the ways in which race and gender inequality in education have been tackled through policies at different institutional levels. *Curriculum and policy-making* discusses attempts to centralize control of the curriculum, the role of public examinations, assessment and accountability in educational policy.

See Section A of How to Apply

SOCIOLOGY

Understanding modern societies

Course code D213

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV and radio programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This course is for anyone who wants an introduction to sociology which takes in a wide variety of historical and contemporary forms of society.

Contents

The course analyses the historical formation, present character and future trends of modern industrial society. It is interdisciplinary, going well beyond the traditional boundaries of sociology and using insights and analyses from politics, geography and economics to give a comprehensive picture of the institutions and processes of contemporary social life. It is historical: it traces the origins of capitalism, individualism, the nation-state and the global market, and it assesses the continuing relevance of the classic nineteenth-century theorists who can be said to have founded 'the science of society'. And it is comparative, examining both liberal democracy and socialist states and assessing the influence of the West on the Third World. We look at everyday social life and institutions – the family, education, religion, health, the workplace, consumerism, modern cities, the media – and the forces that are changing contemporary society: the 'globalization' of production, de-industrialization and the growth of the service classes, information technology, and new political and social movements, such as feminism and the 'greens'.

The course introduces much original material – classic texts and articles – and makes imaginative use of television, radio and audio cassettes.

See Section A of How to Apply

Exploring educational issues

Course code E208

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
TV and radio programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Part of the Education diploma programme –
see page 66

This introductory course, broadly based and multidisciplinary, will advance your understanding of education and provide you with means of evaluating contemporary educational issues.

Who is the course for?

The course is for everyone who is interested in education, either professionally (for example teachers, governors) or personally (for example parents, students).

Previous knowledge required

You are not expected to have any special knowledge.

Contents

We begin with a survey of the issues to be studied as they appear to people involved in and concerned about education, and think about the questions that underlie them.

The first issues are to do with the relationship between family and school. They include the influence of parents as teachers, the young child beginning school, the nature of learning at home and school and the relationship between parents and teachers. Under the general heading of 'Teaching and learning' at school, we ask what should be taught and how pupils learn, and discuss the nature of teaching, current developments, evaluation and change.

Next we consider the organization of schooling: how education is controlled and financed, the organization, management and effectiveness of schools, and questions about teachers' professionalism. We investigate equality in education, with particular attention to current discussions and research in the areas of social class, gender, race and special needs, and not forgetting philosophical debates. Finally, we look at the relationship between education and the economy, and between work and leisure on the one hand and education and training on the other.

See Section A of How to Apply

Beliefs and ideologies

Course code DE354

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

If you are interested in sociology, politics, social history or religion, in particular the role of ideas in society, this course would be a suitable choice for you.

Previous knowledge required

Although this is primarily a sociological course, it draws on many disciplines and approaches – anthropology, political science, psychoanalysis and discourse theory among them. Some knowledge of debates within social

theory would be helpful, although it is not necessary.

Contents

How do ideas, values, language and other symbolic systems shape not only our perception and experience of the world but also our actions? How do such processes help to maintain or alter the structures of power within our society? These are questions which social theorists have attempted to understand by using the concept of ideology. This course introduces some of the many definitions and theories of ideology and shows how ideology works by looking at a selection of case studies, both historical and contemporary.

We examine the social consequences of religious beliefs, rituals and movements as well as their 'rationality'. We consider not just formal political ideologies, such as liberalism, conservatism and fascism, but also their connection with such phenomena as nationalism and popular culture. We also explore how our own 'subjectivities' are formed, both in terms of sexuality and through such ideological institutions as the family and the school.

See Section A of How to Apply

Work and society

Course code DE325

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set books Audio cassettes
TV programme Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Possibly available for the last time in 1992

This course presents contemporary debates which challenge everyday assumptions about work and reveals how our 'common-sense' view of the concept of work proves to be riddled with inconsistencies.

Who is the course for?

The course will appeal to anyone, employer, employee, social scientist, personnel manager, administrator, management consultant, trade unionist or trainer, who is interested in understanding how and why work is socially structured and the consequences of this for our own lives as well as for stability and change.

OKAY, SHOW ME
THE GENE THAT
SAYS I STAY
AT HOME AND
DO THE WASHING
UP!!!



Previous knowledge required

Although this course has close links with other social science courses (notably D102 *Social sciences: a foundation course* and D207 *An introduction to sociology*), you can complete it without having studied those courses. If you have no knowledge of sociology you are advised to read an introductory sociology textbook before you start the course.

Contents

Work is one of the most significant things we do. It tells us not only a great deal about ourselves as individuals but also a great deal, collectively, about the society in which we live and toil.

What is work and why is it designed as it is? How and why do jobs differ in security, conditions and status? Why and how does professional work differ from factory work? Why should we trust the professional but not the car dealer? Should non-paid work such as housework and voluntary work be regarded as work? Is criminal activity work? How, too, are we to regard the 'black economy' or the paid 'official' work of the monarchy? Is the nature and organization of work similar in all societies? How are we to make sense of those aspects of society which serve to support and sustain current forms of work with all their inequalities and potential for conflict? These are just some of the questions raised in the course.

See Section A of How to Apply

COURSES AND STUDY PACKS IN EDUCATION

Many of the courses and study packs in this area are designed for professionals working in education. But some of them are also suitable for parents and other interested lay people who want to know more about education. Most courses and packs can be studied singly, but for students who want qualifications many of the courses can also be part of at least one of our modular awards: the Certificate of Professional Development in Education, the Professional Diploma in Post-compulsory Education, and the Advanced Diplomas in Educational Management, Mathematics Education and Special Needs in Education. There is also a taught MA in Education to which successful diploma students can progress or which you can enter directly if you already have appropriate qualifications.

MANAGING AND GOVERNING SCHOOLS

Courses and study packs for those in management positions in schools (or who would like to move into management) and for school governors.

Governing schools in the 90s: into action (*study pack*, PE636)

Financial and resource management in schools (*study pack*, PE633)

Managing schools (*course*, E325)

Policy-making in education (*course*, E333)

Applied studies in educational management (*course*, EP851)

TEACHING AND THE CURRICULUM

Most of these courses and study packs are for teachers and others who are professionally involved in education. But some should appeal to anyone with a concern for children and an interest in what goes on in schools; these are marked with an asterisk.

Curriculum development

Working with under-fives (*study pack*, PE635)

Curriculum in action: practical classroom evaluation (*study pack*, P533)

Making school-centred INSET work (*study pack*, P536)

Curriculum and learning (*course*, E271)*

Computers and learning (*course*, EH232)*

'Race', education and society (*course*, ED356)

Professional development in action (*course*, E621)

Assessment and record-keeping in the primary curriculum (*course*, E623)

Special needs

Teaching for diversity: preventing difficulties in learning (*study pack*, EP538P)

Mental handicap: changing perspectives (*study pack*, K668S)*

Working with children and young people (*study pack*, K254S)*

Mental handicap: changing perspectives (*course*, K668)

Learning for all (*course*, E242)*

Working with children and young people (*course*, K254)

Applied studies in learning difficulties in education (*course*, E806)

Language and communication

Talk and learning 5 to 16: an in-service pack on oracy for teachers (*study pack*, P535)

Media education: an introduction for teachers (*study pack*, PE632)

Every child's language (*study pack*, P534)

Children, language and literature (*study pack*, P530)

Communication and education (*course*, EH207)*

Education and work

Teachers into business and industry (*study pack*, PE634S)

Teachers into business and industry (*course*, E622)

Science education

Primary science: why and how (*study pack*, EHP531)

Primary science: case studies in learning and assessment (*study pack*, EHP532)

Science for primary teachers (*study pack*, PS548)

Physics for science teachers (*study pack*, PSEH545)

Science in the primary curriculum (*course*, E625)

Technology education

Technology in secondary schools (*study pack*, EPT539)*

Teaching and learning technology in schools: food production systems (*course*, ET887)

Teaching and learning technology in schools: instrumentation (electronics) (*course*, ET897)

Mathematics education

Working mathematically with infants (*study pack, PM647D*)
Supporting primary mathematics (*study pack, PM649S*)
Calculators in the primary school (*study pack, PM537*)
Secondary mathematics: classroom practice (*study pack, PM644*)
Routes to algebra (*study pack, PM641*)
Calculators in the secondary school (*study pack, PM643*)
Statistical investigations in the secondary school (11–16) (*study pack, PM646*)
Working mathematically on mental imagery with third-formers (*study pack, PM647C*)
Visualizing mechanics (*study pack, PM640*)
Working mathematically with sixth-formers (*study pack, PM647A*)
Working mathematically on film with sixth-formers (*study pack, PM647B*)
Project Mathematics Update (*study pack, PM750–753*)
Working mathematically within a whole-school curriculum (*study pack, PM647F*)
Girls into mathematics (*study pack, PM645*)
Working with videotape of a mathematics classroom (*study pack, PM647E*)
Working together (school-based professional development in mathematics) (*study pack, PM648*)
Mathematics in the primary curriculum (*course, E627*)
Using mathematical thinking (*course, ME234*)
Learning and teaching mathematics (*course, EM236*)
Applied studies in mathematics education (*course, E802*)

Education for family life

Family lifestyles (*study pack, PE630*)*
Childhood (*study pack, PE631*)*

POST-COMPULSORY EDUCATION

Courses and study packs for people working in further, higher and adult education and youth work.

How we see the world (*study pack, P524*)
Talking with young people (*study pack, P525*)
Developing an open learning package (*study pack, H521*)
On the line: telephone counselling and teaching (*study pack, P519*)
Delivering NVQs: a guide to staff development (*study pack, P526*)
Implementing NVQs: a staff development guide (*study pack, P527*)
NVQs at work: a guide for employers (*study pack, P527E*)
Accrediting prior learning (*study pack, P528*)
Learning strategies in continuing education: teaching approaches, methods and aids (*study pack, P521*)
Adult learning and teaching: some skills and approaches (*study pack, P52-V2*)
Approaches to adult learning (*course, E872*)
Open learning (*course, E873*)
Counselling (*course, E874*)
Programme design and assessment (*course, E876*)
Providing for special needs: policy and practice (*course, E877*)
Delivering NVQs: diploma option (*course, E670*)
Applied studies in post-compulsory education (*course, E860*)

INITIAL TEACHER EDUCATION FOR TEACHERS IN SECONDARY SCHOOLS

A course and study packs derived from it, primarily for those just starting their training or returning to teaching after a career break. (The University does not offer an initial teacher training qualification but can help to put you in touch with other institutions if you are interested in teaching as a career.)

Introductions (*study pack, EP228I*)
Working with pupils (*study pack, EP228P*)
Working in classrooms (*study pack, EP228C*)
Working in schools (*study pack, EP228S*)
Schools, teaching and the wider world (*study pack, EP228W*)
Frameworks for teaching: audio-visual pack (*study pack, EP228V*)
Frameworks for teaching (*course, EP228*)

If you would like to know more about these courses and study packs and have not already got the Professional Development in Education brochure, please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

CONTENTS

Interdisciplinary	70
Basic physical science for technology	
Graphs, networks and design	
Systems	71
Managing in organizations	
Working with systems	
Food production systems	
Complexity, management and change: applying a systems approach	
Design	73
Design: principles and practice	
Design and innovation	
Computer-aided design	
Electronics and communications	74
Introductory digital electronics	
Microelectronics for industry	
The management perspective	
The engineer's perspective	
The design perspective	
Digital telecommunications: switching	
Digital telecommunications: transmission	
Analogue and digital electronics	
Microprocessor-based computers	
Instrumentation	
Electromagnetism	
Digital telecommunications	
Electronic materials and devices	
Control engineering	
Engineering mechanics	79
Introduction to thermofluid mechanics	
Engineering mechanics: solids	
Engineering mechanics: solids and fluids	
Mathematical methods and fluid mechanics	
Heat transfer: principles and applications	
Manufacturing	80
Resource utilization: energy and materials	
Materials	81
Materials in action	
Stress on materials	
Materials for electronics	
Materials in manufacturing	
Failure of stressed materials	
Electronic materials and devices	

INTERDISCIPLINARY

Basic physical science for technology

Course code T281

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

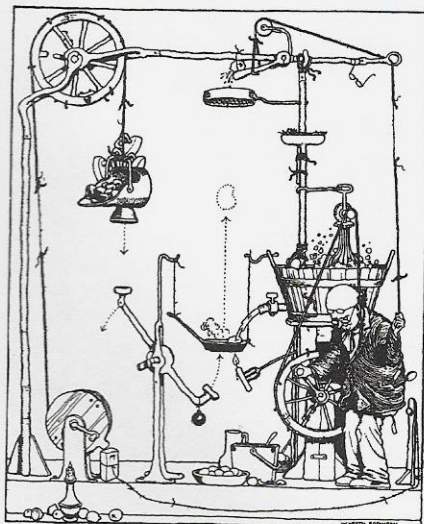
Many students coming to technology courses find that they need some introductory science, either because they have not previously studied science or because they need a refresher course. T281 is designed to fill this need.

Who is the course for?

Although intended for students who wish to study the more advanced technology courses, T281 would be useful as a refresher course in basic science for qualified engineers or as an introduction for non-technical industrial and commercial personnel who want an insight into the scientific basis of engineering. It can be studied independently of other technology courses.

Previous knowledge required

The course assumes that you know very little science but do have an elementary knowledge of differential



calculus. It has been written so that if you are simultaneously studying TM282 *Modelling with mathematics: an introduction*, the level of mathematics used in T281 is no greater than has been reached by TM282 at the corresponding point of the course.

Contents

The course deals with five main areas of science: introductory mechanics and properties of matter, heat, optics, chemistry, and electricity and magnetism. It is not intended to provide a comprehensive coverage of the whole of these areas but to examine in depth selected topics of special interest to the engineer. The emphasis is on using the selected topics in solving problems and an accompanying problem book gives practice in this. The residential school gives you experience not only in standard determinations of physical and chemical constants but also of more open-ended project work.

See Section A of How to Apply

Graphs, networks and design

Course code TM361

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This is a problem-based course. The material is presented in a down-to-earth manner, with an emphasis on solving problems and applying algorithms rather than on abstract ideas and formal proofs.

Who is the course for?

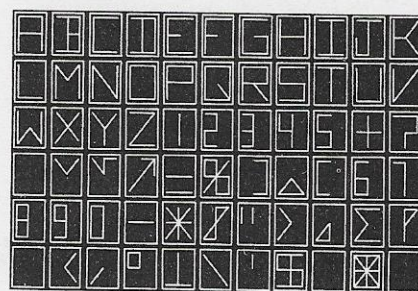
This course is intended for a wide audience. Those who are more mathematically inclined will see how their mathematics can be used to solve real problems, while those with a technological background will come to appreciate a mathematical framework as a means of relating different ideas.

Previous knowledge required

We strongly recommend that you should have had some experience in mathematics (as given by, for example, M101 *Mathematics: a foundation course*, M203 *Introduction to pure mathematics*, MS283 *An introduction to calculus*, MST204 *Mathematical models and methods*, TM282 *Modelling with math-*

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A C E F H J L P U

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hexadecimal system

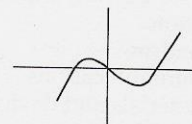
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K L M N O P Q R S
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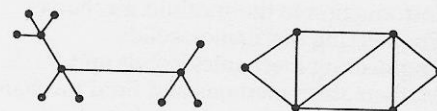
ematics: an introduction or an A-level mathematics course).

Contents

Much of the course is about using mathematical ideas to model problems, and representing these ideas by means of diagrams. The word 'graphs' in the course title does not refer to pictures like this:



but to diagrams consisting of points joined by lines, like this:



These points may correspond to chemical atoms, towns on a map, electrical terminals or anything else that can be connected in pairs.

Some areas covered are operational research; transport planning and traffic control; communications; structures and mechanisms; electrical and related networks.

The main areas of mathematical interest are linear graphs and digraphs; network flows; enumeration; block designs; geometry.

See Section A of How to Apply

SYSTEMS

Managing in organizations

Course code T244

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV programmes Residential school
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

If managing were something that could be easily taught it wouldn't be such a problem. In fact, for most of us, a great deal is simply learned by experience. One purpose of this course is to help you learn from and make sense of your own experience in an organization.

Who is the course for?

This course should suit anyone who has to get things done with or through other people and may be especially appropriate for those moving into positions with greater managerial or administrative responsibilities.

Previous knowledge required

No special knowledge is assumed.

Contents

The course explains certain common organizational specialities and practices (e.g. organizational development, management by objectives) and considers the reasons for them. It discusses characteristic issues – some intrinsic (e.g. trust versus control) and some topical (e.g. information technology) – in such a way as to let you see particular difficulties or events in your own organization in a wider context and appreciate some of the pitfalls and opportunities they may present.

The course helps you to understand your organizational relationships better (whether interdepartmental or supervisory); to recognize when your initial interpretation of problems may be inadequate; and to know how to go about generating a more rounded understanding of and response to complicated issues. The following comments from former students are typical: 'It has given me a new method and outlook on my job'; 'With a recent career move the course has come at just the right time and directly relates to a lot of problems I am facing'.

See Section A of How to Apply

Working with systems

Course code T247

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

See below

The course includes

Study texts Audio cassettes TV programmes
Computing Personal tutor
Assignments and exam

You will need

Computer

Certification

Course certificate

Could count towards a BA degree

Home computing course – see page 4

We depend on health and financial systems, and they depend on information systems. We call parts of our bodies 'systems', and insecticides 'systemic'. We all have to work in and with these complex systems and we don't really understand them. We haven't got the time or the information to think through all the interactions which make the systems what they are and which determine the success or failure of what we do. We probably haven't got the mental capacity either. So, in order to be effective, we need to adopt a different way of thinking about these systems. The course teaches this distinctive and very practical way of thinking.

Who is the course for?

The course will be useful to anyone who has felt intrigued, puzzled, frustrated or enraged by the behaviour of a system and wants to make it work better. Such people could be managers at any level in the public, private, or voluntary sectors, technologists in engineering or computing, NHS medical staff or administrators – in fact, the course is relevant to most jobs in a highly developed and interdependent society.

Previous knowledge required

If you have no computing experience you will need to buy the pack RT520 *A practical introduction to computing using MS-DOS and Framework®* and spend about eight hours working through it before the course begins.

Contents

There are two kinds of content, topics and skills. Topics include the processing of work through a factory or office, ethical investments, the ecology of a garden, managing change, medical diagnosis and how groups make decisions. The main skill is modelling. By the end of the course you will be able to build and use models of

different kinds, particularly spreadsheet models, to help you to generate and try out ideas for improving the functioning of a wide variety of systems.

See Section A of How to Apply

Food production systems

Course code T274

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course analyses the world's production and supply of food and considers how this might change or be changed in the future.

Who is the course for?

Food is essential for life, and its availability and price are of concern to everyone; its production, processing and distribution are of special interest to those who work in agriculture and the food industry and also to the amateur cook or gardener.

Previous knowledge required

You are expected to be familiar with elementary biology, chemistry and maths.

Contents

We begin with the nature of the world's food problems, then consider the nutritional needs of human beings. There is a detailed analysis of your own diet over a short period. We look at the growing of crops, seeing how the production of useful food products and loss to pests and disease can be regulated, then at the use of animals as a source of food and the factors that influence their efficiency. The chemical, microbiological and engineering aspects of industrial and domestic processing of foodstuffs are examined, and the practical aspects are investigated in a case study on bread.

The last part of the course is about decision processes. Consumers and producers do not make their decisions about food in isolation, but within an organizational framework for the provision of land, food distribution and storage. Political decisions govern national priorities for the allocation of resources to food production or other activities, and the relationships between nations in terms of trade, aid

and education are important.

The conclusion of the course uses a systems approach to construct models of the operation of the world food system.

See Section A of How to Apply

Complexity, management and change: applying a systems approach

Course code T301

Full credit Third level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
Optional computing Personal tutor
Assignments and exam

You will need

Access to personal computer for computing option

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course should be of interest to those who have to deal with intransigent human and technical problems either in short-term tactical ways or by the development of longer-term strategies for innovation and change.

The extensive use of diagrams may present difficulties if you have severe visual impairment. The course is almost entirely print-based, so if you have any other disability you should be able to complete it as long as you can devise a suitable project.

Previous knowledge required

The course has been designed to cater for students from a wide range of backgrounds and no special knowledge is expected of you, but if you are new to systems you must be prepared for a heavy workload in the first couple of weeks.

Contents

Problems and opportunities encountered in technical projects, in organizations, in the community, and in your own life tend to be messy and ill-defined. They are usually connected with many other issues, and their human and technical aspects are often tangled together in a bewildering way. They are very unlike the neat examples found in technical text-books. Our aim is to teach systems methods that can help you get to grips with such complex and elusive situations, model them, consider the consequences of

various actions and bring about improvements.

The course teaches three complementary methods:

- Analysis of systems failures and catastrophes.
- A systems modelling approach to decision-making.
- A systems approach to organizational change.

Once you have been taught the methods, you carry out a ten-week project: the course is more practical than theoretical. It concentrates on the 'decisions, people and organizations' side of technology rather than the 'nuts and bolts' engineering side. Both are of course needed in most real situations.

See Section A of How to Apply

MANAGEMENT

The University's Open Business School offers packs and courses suitable for managers at all levels. They can be studied either singly or as part of one of the modular awards offered in this area: the Professional Certificate in Management, the Professional Diploma in Management and the degree of Master of Business Administration (MBA).

General management

Women into management (*course, P675*)
The effective manager (*course, B784*)
Managing health services (*course, B782*)
Managing voluntary and non-profit enterprises (*course, B789*)
The Management Project (*course, P799*)
Information systems and IT for managers (*course, P792*)
Strategic management (*course, B881*)
Creative management (*course, B882*)
Managing public services (*course, B887*)

Managing change

Planning and managing change (*course, P679*)
Managing in the competitive environment (*course, P790*)
The challenge of the external environment (*course, B885*)

Managing design

Managing design (*course, P791*)

Finance and accounting

Accounting and the PC for managers (*course, B785*)
Managing financial resources (*course, B793*)
Corporate financial strategy (*course, B883*)

Marketing

Opening the single market (*study pack, B787*)
Managing customer and client relations (*course, B786*)
International marketing (*course, P672*)

Retailing

Retail management: policy and merchandising (*course, B783*)

Human resource management

Towards IPM Stage 2 (*study pack, P786*)
Personnel selection and interviewing (*course, P673*)
Managing people (*course, P676*)
Human resource strategies (*course, B884*)

If you would like to know more about these courses and study packs and have not already got the Open Business School brochures, please ring the Central Enquiry Service (0908 653231) and they will be sent to you as soon as possible.

DESIGN

Design: principles and practice

Course code T264
Half credit Second level
Fee £295

Study period
Feb–Oct 1992 About 7 hours a week

Subject knowledge required
None

The course includes
Study texts Audio cassettes Video cassettes
Home kit Personal tutor
Assignments and exam

Certification
Course certificate
Could count towards a BA degree

Who is the course for?

This course is a general introduction to design. It will not train you to be a designer, but it will give you an appreciation of what it is like to be one. It describes the problems that designers face, the principles they apply in their work and how design problems are resolved in practice. You will then be able to look at technological products, understand them better as designed objects and evaluate them more critically. The examples used in the course are mostly familiar, mass-manufactured products. No previous knowledge or experience of design is necessary; you will be taught all the concepts and skills you need to complete the course.

Contents

Each section of the course takes a different kind of artefact to illustrate successive phases in the design process and different aspects of the designer's work. We look at market research and initial specification for household equipment; invention and conceptual design in relation to the bicycle; geometry and spatial layout as exemplified in house design; and detailed design and manufacturing aspects in the car industry. You will go through a parallel series of exercises in which you specify and design a simple product yourself. These exercises will help you to develop some basic design skills such as drawing, modelling and visualizing.

See Section A of How to Apply

Design and innovation

Course code T362
Half credit Third level
Fee £275

Study period
Feb–Oct 1992 About 7 hours a week

Subject knowledge required
None

The course includes
Study texts Set book Audio cassettes
TV programmes Residential school
Personal tutor Assignments and exam

Certification
Course certificate
Could count towards a BA degree

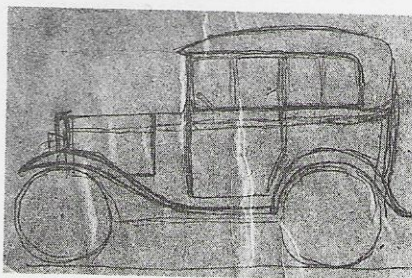
Who is the course for?

This course should help you understand the processes of product design and industrial innovation. It should also enable you to engage more effectively in or at least understand design and innovation activities, whether you are an inventor, designer, engineer, researcher, planner or simply a consumer.

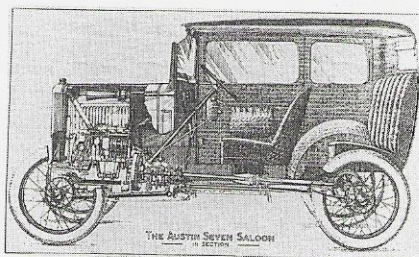
The course should not present substantial problems if you have a disability. The project work could require visits outside the home, for example to libraries.

Previous knowledge required

You need no special technical or mathematical knowledge.



Early sketch of Austin Seven, c1921



Sectional drawing of Austin Seven saloon, c1930

Contents

Although it is based in technology, the course adopts a broad interdisciplinary approach in order to give you an appreciation of innovation as a social and economic as well as a technological activity.

The course consists of a series of blocks of work each concentrating on a particular 'source' of innovation, starting with the individual inventor and moving on to research institutes, small and medium-sized firms, government agencies and multinational corporations. Each block takes a particular area of technology for the example of innovation, with case studies drawn mainly from the fields of energy, transport and communication systems.

There is also a practical project running through the course in which you can either research a case study of an existing product or prepare a new product development proposal for an idea of your own.

See Section A of How to Apply

Computer-aided design

Course code T363
Half credit Third level
Fee £275

Study period
Feb–Oct 1992 About 7 hours a week

Subject knowledge required
None

The course includes
Study texts Video cassettes Computing
Personal tutor Assignments and exam

You will need
Personal computer (see below)

Certification
Course certificate
Could count towards a BA degree

Who is the course for?

The course is for all those who wish to:

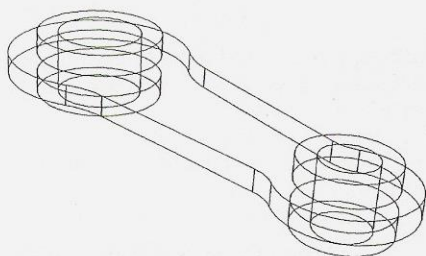
- Understand the principles of computer-aided design and computer graphics.
- Practice the application of those principles in design exercises.
- Understand the application of those principles in professional CAD packages used in engineering, electronics and building design.

Previous knowledge required

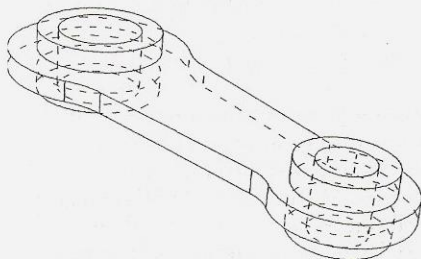
You are not expected to be familiar either with the design process or with computers. Some experience of reading mathematical notation, particularly the mathematics of matrices and solid geometry, would be an advantage.

Contents

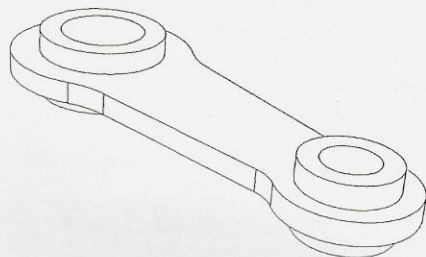
The course is presented in three parallel but interdependent streams.



'Wireframe' representation of a component



(a)



(b)

(a) Hidden lines shown dashed, (b) removal of hidden lines to give impression of solid object

Text This deals with the ways in which tasks and procedures in design can be formalized, how geometrical and other properties of designed objects can be represented and the significance of computer aids for the theory and practice of design. This material is broadly divided into conceptual and mathematical foundations, modelling, analysis and synthesis.

Video The video cassettes demonstrate some of the theoretical principles and the use of professional CAD systems in areas such as draughting, modelling, analysis and graphics.

CAD exercises The CAD exercises, using the microcomputer, are mainly concerned with applications in architecture, electronics and mechanical engineering design. Most of the exercises are based on original teaching software developed at the Open University for this course. Although some limited commercial CAD software for modelling and draughting is included, the course does not provide training in professional CAD use.

You will need the use of a computer that meets the specification for the course. You can obtain this specification either from the T363 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA or from the Academic Computing Service Help Desk (see page 4).

See Section A of How to Apply

ELECTRONICS AND COMMUNICATIONS

Introductory digital electronics

Study pack code PT503
Fee £28.49 (inc. £0.49 VAT)
About 50 hours of study

Subject knowledge required
Some

The pack includes
Study texts Audio cassettes

This pack introduces the basic ideas of digital electronics, starting with the elementary concept of truth tables and going on to a brief examination of a microcomputer system.

Who is the pack for?

Engineers, technicians and electronic designers working in industry who need to update their skills to include digital electronic systems; scientists and others who have an elementary knowledge of electronics.

Contents

- Combinational logic and truth tables.
 - Sequential logic devices and sequencers.
 - Analogue/digital conversion systems.
 - Digital systems design.
- The pack does not include an experiment kit; a series of experiments is described instead. You can perform these using your own equipment; you will need:
- Dual trace oscilloscope (1 MHz band width).
 - Sinewave/squarewave oscillator (1–20 kHz).
 - Voltmeter (d.c. 1–15 V).
 - A few selected digital integrated circuits.
 - D.c. power supply ± 15 V and +5 V.

See Section B of How to Apply

MICROELECTRONICS FOR INDUSTRY: CUSTOM CHIPS IN MANUFACTURED PRODUCTS

Microelectronics is entering a new phase in which users can readily design integrated circuits (ICs) tailored to their own requirements. Such custom ICs have a wide potential for replacing electronic, electromechanical or even purely mechanical assemblies and offer advantages such as smaller size and increased reliability. The next three packs explore aspects of custom ICs.

The management perspective

Study pack code PT504
Fee £217.50 (inc. £17.50 VAT)

Training pack code PT504P
Fee £75

About 50 hours of study

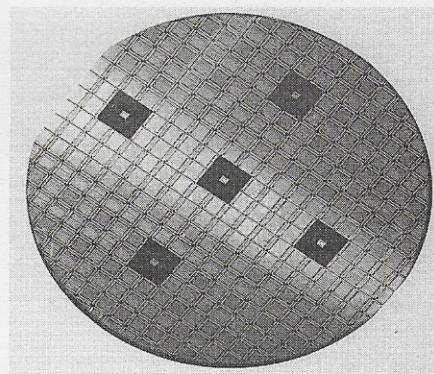
Subject knowledge required
None

The pack includes

Study texts Audio and video cassettes
(Training pack includes 5 copies of the study texts only)

Who is the pack for?

- Managers in manufacturing companies who may not yet be aware of recent developments or using microelectronics in their products.
 - Managers in companies already using conventional microelectronics who have not yet considered the implications of custom ICs.
- By the end of your study you should be aware of the potential usefulness of microelectronics for your company's products and of how to plan for the introduction of custom ICs.



Individual chips laid out in a regular array on a circular wafer of semiconductor

Contents

- *Microelectronics matters*, which deals from the managerial point of view with such matters as growth of microelectronics, reasons for choosing microelectronics and how to get started in microelectronics.
 - Three custom IC case studies.
 - A reference book including a glossary of terms.
 - Two 30-minute video cassettes and a 60-minute audio cassette.
- The training pack, which contains five copies of the study texts but no audio-visual material, is available for companies which have purchased a full study pack and want to use the pack for training other employees.

See Section B of How to Apply

The engineer's perspective

Study pack code PT505
Fee £353.43 (inc. £28.43 VAT)

Training pack code PT505P
Fee £75

About 100 hours of study

Subject knowledge required
Some

The pack includes

Study texts Audio and video cassettes
(Training pack includes 5 copies of the study texts only)

Who is the pack for?

Professional engineers, particularly project managers, who expect to be closely involved in using or evaluating the potential for custom microelectronics in a product. After working through the pack you should be able to carry out a feasibility study of the implementation of a custom IC in a product, plan it and oversee its execution.

Very little detailed knowledge of electronics is assumed; all but the most basic ideas you need are presented in the pack.

Contents

- *Microelectronics decisions*, which discusses the considerations that influence a decision about what sort of microelectronics to use in a company product and illustrates the discussion with project studies.
- Seven books on topics relevant to custom microelectronics: basic ideas in electronics; integrated circuits; IC fabrication; computer-aided design; system and logic simulation; circuit and device modelling; design for testing.
- A 30-minute video cassette and a 60-minute audio cassette with associated notes.
- A comprehensive index.

The training pack, which contains five copies of the study texts but no audio-visual material, is available for companies which have purchased a full study pack and want to use the pack for training other employees.

See Section B of How to Apply

The design perspective

Study pack code PT506
Fee £1550 (inc. £124.71 VAT)

Training pack code PT506P
Fee £75

Subject knowledge required
Some

The pack includes

Study texts Audio and video cassettes
Computer-aided design system
Chip prototyping service Software

This pack provides the necessary equipment and information for someone who already has some electronics experience (to HNC or HND level) to start designing custom microelectronics.

The main feature of the pack is a full commercial electronic computer-aided design system. This will allow you to design and simulate your own circuits, and send them for fabrication. To support this activity there is one main design exercise, together with other exercises, worked examples and self-assessment tutorials on the computer.

Four study texts cover areas such as design for testing, simulation and CAD. There is also a reference text covering most of the terms used in the world of microelectronics. Audio cassettes complement the exercises and tutorials, and provide commentaries on a booklet of reprinted articles on the subject. An historical view of CAD in microelectronics is presented on video by industrial designers.

You will need the following:
Computer: PC, AT(286) with EGA card and monitor, 30 Mbytes of free hard-disk space and a free serial (RS232) communication port. The operating system must be MS-DOS version 3.2 or later. An Epson EX80-compatible printer. You can get further details on request.

See Section B of How to Apply

Digital telecommunications: switching

Study pack code PT628
Fee £391.73 (inc. £6.73 VAT)
About 100 hours of study

Subject knowledge required
Substantial

The pack includes

Study texts Audio cassettes

This pack introduces modern digital telecommunications systems, services and techniques through a combination of systems studies, material on basic techniques and theoretical ideas. It will be of interest to engineers, technical managers and scientists involved in setting up or operating systems in digital telecommunications. With PT629 *Digital telecommunications: transmission*, it will bring you up to date with recent developments. You are expected to have a standard of maths equal to A-level.

Contents

The pack is about telecommunication systems in which software techniques are used to 'switch' digital data between individual time slots on a high-speed link, or individual data packets to particular destinations. Examples of such switched networks include both the public telephone network and specialized data communication networks. Three themes run through the pack: the importance of standards and protocols; the need for statistical techniques to analyse and design telecommunication systems, and the vital role of software in implementing and managing such systems. Practical examples are presented: electronic mail; X-25 packet switching; the OSI reference model; a digital telephone exchange; data communication networks.

See Section B of How to Apply

The materials in this study pack are the basis of a course which is presented twice a year, in January and May. The fee for the course, which includes assessment leading to the award of a statement of course participation, is about £425. There is also an examined version of the course (T820) which if completed successfully can be counted towards the Postgraduate Diploma in Computing for Commerce and Industry. You can get further details by ringing the Central Enquiry Service (0908 653231).

Digital telecommunications: transmission

Study pack code PT629
Fee £391.73 (inc. £6.73 VAT)
About 100 hours of study

Subject knowledge required
Substantial

The pack includes
Study texts Audio cassettes

This pack introduces modern digital telecommunications systems, services and techniques through a combination of systems studies, material on basic techniques and theoretical ideas. It will be of interest to engineers, technical managers and scientists involved in setting up or operating systems in digital telecommunications. With PT628 *Digital telecommunications: switching* it will bring you up to date with recent developments. You are expected to have a standard of maths equal to A-level and to have worked through PT628.

Contents

The pack is about the nature of the signals used in digital telecommunication systems and the physical characteristics of the channels through which they are transmitted. An introduction dealing with the fundamental properties of digital signals and how they can be modelled is followed by modulation and coding schemes. The effects on signals of transmission through various media, including free space and optical fibre, are considered. The later part of the pack consists of two systems studies: a long-distance optical fibre transmission link, and a study of mobile communication systems, including both satellite and cellular radio approaches.

See Section B of How to Apply

The materials for this study pack are the basis of a course which is presented twice a year, in January and May. The fee for the course, which includes assessment leading to the award of a statement of course participation, is about £425. You can get further details by ringing the Central Enquiry Service (0908 653231).

Analogue and digital electronics

Course code T202
Full credit Second level
Fee £450

Study period
Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required
None

The course includes
Study texts Home kit Computing Residential school Personal tutor Assignments and exam

You will need
Scientific calculator Audio cassette player Home computer Multimeter

Certification
Course certificate
Could count towards a BA degree
Home computing course – see page 4

Who is the course for?

This course is for all those who want some knowledge of the basic principles and vocabulary of modern electronics, whether or not they intend to take further electronics courses.

Previous knowledge required

No knowledge of electronics is expected but you must have some mathematical skills: manipulation of algebraic expressions, use of sines and cosines, ability to interchange rectangular and polar co-ordinate representations and simple differentiation. A-level maths should be sufficient. Some acquaintance with simple complex-number theory would be an advantage.

Contents

Complex electronic systems can be designed and constructed from simpler building blocks. The course shows how system components can be modelled mathematically and connected together to meet an overall specification.

You will be taught how to measure and use the relevant electronic variables when you design and build small analogue and digital systems. The home kit includes a dual-trace oscilloscope, a signal generator and power supply, pre-built circuit modules, discrete components and other apparatus. The topics covered include linear a.c. circuit theory (phasors), equivalent circuits, feedback (with particular reference to operational amplifiers), semi-conductor devices, combinational and sequential logic circuits and design, A–D and D–A conversion, LSI components such as ROMs and RAMs and an introduction to high-frequency techniques.

Computers are widely used commercially in the design and analysis of electronic circuits. Software is supplied to illustrate circuit analysis concepts

and to simulate both analogue and digital circuits.

See Section A of How to Apply

Microprocessor-based computers

Course code T223
Half credit Second level
Fee: see page 87

Study period
Feb–Oct 1992 About 7 hours a week

Subject knowledge required
Some

The course includes
Study texts Practical work Home kit Personal tutor Assignments and exam

You will need
Home computer

Certification
Course certificate
Transferable towards a BA degree
Home computing course – see page 4

This course gives an introduction to the components and operation of microprocessor-based computers. It concentrates on the physical components although some simple programming is included. Home computing is used extensively to give you practical experience of the principles introduced in the course. A temperature measurement system supplied as a home kit is also part of the practical work.

Who is the course for?

The course will be useful for anyone who needs a basic knowledge of the components and operation of small computer systems. But it is not a 'computer awareness' course and goes beyond the introductory level. It does not teach programming or programming languages.

Previous knowledge required

The course assumes that you have a working knowledge of MS-DOS and GEM (copying and backing up disks etc.). You will receive an introductory booklet in the first mailing so that you can gain this knowledge before the course begins.

Content

We start with a brief history of computers, a survey of applications and an introduction to the main components of a microprocessor-based computer system. The process of developing programs for computers is outlined and the C programming language is introduced so that you can perform simple experiments and make changes to the temperature measurement system program.

We examine methods of representing numbers and physical quantities in a

form suitable for a computer, and look at the basic operation of a simple computer processor. The advantages and disadvantages of different programming languages are also discussed.

A substantial part of the course, both theoretical and practical, is devoted to input and output, often the most complicated part of a computer system. We look briefly at systems ranging from home computers to small control applications. The computer in the home kit is used as an example of a control application. The course ends with a brief survey of current developments and trends.

Experimental work

You will need ready use of a micro-computer that meets the specification of the University's home computing policy.

The home kit will be connected to your home computer through its serial port. You will need to buy four RB14 batteries for the kit.

See Section A of How to Apply

Instrumentation

Course code T292

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

See below

The course includes

Study texts Set book TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

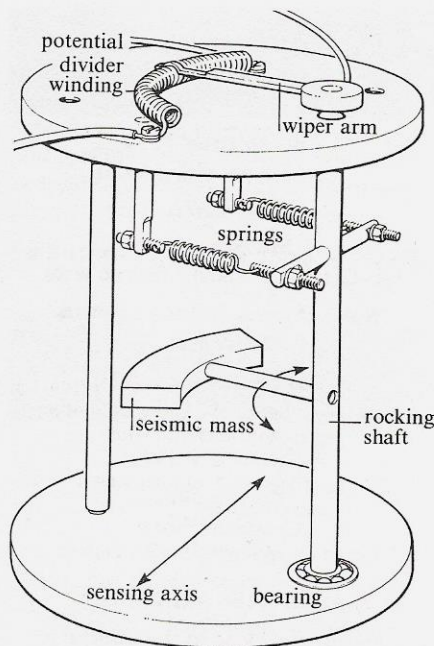
Could count towards a BA degree

Who is the course for?

This course is for anyone who wants an introduction to the principles and techniques of instrumentation and to commonly used hardware. It is particularly suitable for electronic, mechanical, production or instrumentation engineers and technicians in industry.

Previous knowledge required

You should have physical science or technical education going beyond O-level, and mathematics of about A-level standard. You should understand physical quantities such as force, pressure, strain, acceleration, density, current, voltage and capacitance, and be familiar with some of the basic laws of physics such as Newton's second law, Ohm's law and Kirchoff's laws. You need mathematical skills including manipulation of algebraic expressions



Simplified drawing showing a single seismic mass

and use of trigonometric and exponential functions. It would be helpful to have some familiarity with first- and second-order differential equations; you will not be expected to solve them but they are used to determine important step and frequency response characteristics. You could get the necessary physical science background by studying T281 *Basic physical science for technology* and the mathematics by studying TM282 *Modelling with mathematics: an introduction*. Only a slight knowledge of electronics is assumed. If you want to make sure that your mathematical knowledge is sufficient for the course, you can obtain a maths quiz by sending a stamped self-addressed envelope to: The T292 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

The course is about the measurement of physical quantities and the transmission, processing and display of data. It begins with the theory of transducers and how they are used to measure such quantities as strain, displacement, velocity, acceleration, force, pressure and temperature. The texts include extracts from manufacturers' specifications giving details of proprietary devices.

The second part deals with signal transmission and processing, telemetry, data recording and display, and the problem of 'noise' in instrumentation systems.

The residential school will give you practical experience in choosing and using transducers, and interfacing them to computer-based data capture and storage systems.

See Section A of How to Apply

Electromagnetism

Course code SMT356

Details of this course are on page 51.

Digital telecommunications

Course code T322

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

This course is for people who are interested in electronics, telecommunications, information technology and computer communications. It is not a suitable choice if you have a visual disability.

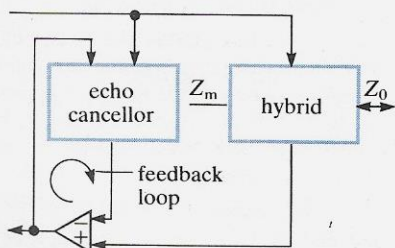
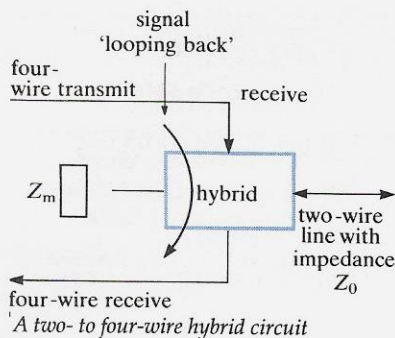
Previous knowledge required

You will need basic electronics, algebra and calculus, and some idea of what computers can do and how they do it. Knowledge of programming is not required.

Contents

Because the subject is expanding so rapidly, the main aim of the course is to enable you to understand and evaluate both current and future systems and techniques. It does not develop expertise in the application of particular techniques, but the use of some of these is illustrated through system studies interspersed with basic principles. The course consists of:

- Preliminary survey and introduction to the basic properties of digital signals.
- First system study: packet switching and electronic mail. Introduction to standards, protocols and layered systems, particularly OSI (open systems interconnection).
- Reliability, traffic and coding. The operation of telecommunication systems depends heavily on statistical information about signals properties, demand for service and transmission impairments. This section develops and applies essential probabilistic concepts.
- Digital signals: time and frequency domain models of digital signals, encoding, decoding and transmission of digital telephone signals.



- Noise: sources and characterization, noise in circuits and systems, threshold detection and error rates.
- Digital coding and modulation: basic principles relevant to the transmission and error control of digital signals. Modems, scramblers, convolutional coding.
- Second system study: digital exchanges – principles of exchange architecture and signalling. Organization, specification and use of telecommunications software.
- Transmission: principles of electrical and optical transmission on lines, cables and wave guides.
- Third system study: optical fibre transmission – design of system elements illustrating many of the principles introduced earlier.
- Fourth system study: digital networks – topology, organization and operation of digital networks.

See Section A of How to Apply

Some of the material from this course has been used as the basis of the two study packs *Digital telecommunications: switching* (PT268) and *Digital telecommunications: transmission* (PT629), details of which are on page 75. There are also short courses based on these packs; you can find out about these by ringing the Central Enquiry Service (0908 653231).

Electronic materials and devices

Course code T393

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Set book Audio and video cassettes Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

The course sits close to the interface between science and technology. Although it is primarily intended for electronic engineers who want to find out why devices act as they do, it is also suitable for scientists who want to appreciate how theory is translated into practice. If you have a visual impairment you may have difficulty with this course.

Previous knowledge required

You need knowledge in three areas:

- Use of diodes, transistors, operational amplifiers (feedback etc.), logic gates and memories in electronic circuitry.
- Fluency and confidence in mathematics, particularly algebraic manipulation, logarithms, exponentials and basic calculus to at least A-level standard. You will find the course much easier if you have studied beyond this and have experience in applying mathematics to physical situations.
- Elementary physics, at least to A-level but preferably beyond.

Contents

This course examines the combination of science and technology behind modern electronic devices. Part of the task is to understand the underlying physics of materials. Practical devices have to be made and to operate reliably, so it is also necessary to appreciate how they are likely to be used and the technologies involved in manufacturing them. Taking this interdisciplinary approach, we have concentrated on a few devices including resistors, diodes, semiconductor lasers, bipolar transistors, field-effect transistors, operational amplifiers and amorphous solar cells. By studying these examples in detail you will be able to understand many other devices, particularly new ones, in this rapidly changing field.

See Section A of How to Apply

Control engineering

Course code T394

Half credit Third level

Fee £450

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassette Home kit Personal tutor Assignments and exam

You will need

TV or monitor for use with home kit

Certification

Course certificate
Could count towards a BA degree

Control theory is used to analyse and design automatic control systems. This course deals with the application of control theory to engineering systems.

Who is the course for?

The course will be of greatest value to engineers working in the design, commissioning and operation of control systems, and to those who want to add some knowledge of digital control to their background in analogue control.

Previous knowledge required

You should be familiar with first- and second-order differential equations and Newton's laws of motion, and with such terms as current, voltage, resistance and capacitance. You will need an elementary understanding of binary numbers.

Contents

Two main case studies are featured throughout the course: a control system in a power station and the control of a satellite tracking antenna. The case studies are introduced first as examples of fundamental control strategies, and later we examine parts of the same systems in more detail. A third study on a digital position controller for an industrial robot is introduced, together with the theory needed to develop control strategies suitable for use with digital computers.

Among topics covered are the use of physical laws to produce models of systems in the form of differential equations and difference equations; methods of predicting the stability of a proposed control system; the use of both analogue and digital controllers and compensators.

About one fifth of the course consists of practical work with the home kit. The kit also provides a computer package for carrying out some design calculations and another on tutorial topics.

See Section A of How to Apply

ENGINEERING MECHANICS

Introduction to thermofluid mechanics

Course code T236

Half credit Second level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

None

The course includes

Study texts Set books Audio cassettes
Video cassettes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

This course is an introduction to the basic principles of thermodynamics and fluid mechanics, widely used in engineering design. The course is designed to give you a sound understanding of the fundamental principles, and many practical examples are presented.

The thermodynamics part concentrates on the energy processes involved in energy conversion engineering, for example in engines and power stations. This requires the application of the basic principles and laws of thermodynamics to working cycles and the calculation of work and heat exchanges.

The fluid dynamic sections develop a basic understanding of fluid flows and how fluids can be used to exert forces and do work, for example in turbines in hydro-electric plant.

Who is the course for?

This course is for people who want to learn the basic principles and laws of thermodynamics and fluid mechanics and their application. It is an important part of any general engineering study, and is essential preparation if you intend to study fluid mechanics and thermodynamics at a higher level. You will need some mathematical skills, particularly use of algebraic equations.

Contents

Energy transfer by heating and working; the First and Second Laws of thermodynamic systems; gas laws; heat engines; the Carnot and Stirling cycles; heat pumps; availability and irreversibility; entropy; control volume analysis; steady-state energy balance; entropy balance; introduction to tables of thermodynamic properties; power cycles and power stations.

Fluid properties and fluid flow

phenomena; the continuum model; fluid flow visualization; laminar and turbulent flow fluid mechanics; Bernoulli's equation; internal flows; pipe flows; fluid momentum; pumps and turbines; fluid systems; similarity analysis and dimensionless groups; physical modelling and analysis.

See Section A of How to Apply

Engineering mechanics: solids

Course code T235

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Audio cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Scientific calculator Simple drawing instruments

Certification

Course certificate
Could count towards a BA degree

Mechanical engineering is ultimately about the design of products such as bridges, cars, power stations, spacecraft etc. and the machines that make them. Today's mechanical engineer is expected to be familiar with subjects ranging from metallurgy to microelectronics, but the main core of knowledge is mechanics.

This course is about the mechanics of solids. It covers subjects such as statics, dynamics and stress analysis.

Who is the course for?

This course is for those who need an introduction to engineering mechanics at degree level.

Previous knowledge required

You need no previous knowledge of engineering, but you must have some mathematical skills, particularly in geometry, algebra and calculus to about A-level standard.

Contents

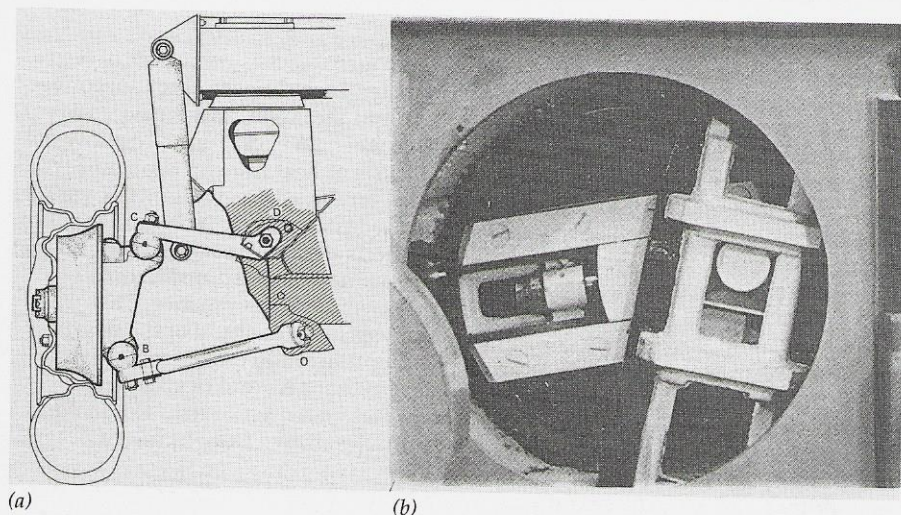
The essence of the course is the quantitative modelling of engineering problems, for example a beam required to support a certain load or a car required to have a certain acceleration. Mathematical models can be constructed so that the size of the beam or the torque that must be applied to the car wheels can be estimated. This is the sort of skill that the course develops.

The first section is about mechanics and discusses how apparently complex machines are made up of combinations of simple mechanisms. The next subject is statics. We introduce Newton's laws and the concept of the free body diagram, and how they can be used to analyse forces in equilibrium.

Then comes kinematics, the analysis of motion. Mechanism analysis is extended with the introduction of velocity diagram methods. This is followed by dynamics; we show how Newton's laws are used to analyse unbalanced forces and predict the accelerations which they produce.

Next we introduce acceleration diagrams and the concept of inertial forces, and move on to stress analysis. We show how structural components can be analysed to predict whether they can withstand the loads applied to them. We look at the concepts of work, power, energy and momentum, and introduce the problems raised by vibration in engineering devices. A study of an electric lift design draws together the concepts discussed in the course, and we end with guided revision.

See Section A of How to Apply



(a)

(b)

Examples of mechanisms: (a) car suspension, (b) the 'heart' of a shaping machine

Engineering mechanics: solids and fluids

Course code T331

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts Audio cassettes TV programmes
Personal tutor Assignments and exam

You will need

Scientific calculator

Certification

Course certificate

Could count towards a BA degree

This course is about the principles of engineering mechanics and their application to design in the hands of the creative engineer.

Who is the course for?

The course is particularly suitable for those who have an interest in mechanical, civil or materials engineering. The emphasis is on realistic problem-solving in a design context. You will spend most of your time in active problem-solving rather than reading.

Previous knowledge required

This course is related to the introductory course *Engineering mechanics: solids* (T232, or its predecessor T232), which would be good preparation. It is important to have a reasonable grounding in mathematics.

Contents

The course is divided into five blocks, the first four introducing material and the last devoted to revision. The subject matter includes the mechanics of solids and fluids but excludes thermodynamics.

Block 1 considers various principles and problems arising from the design of mechanisms and machinery. It is essentially about the control of motion, leading to the study of kinematic principles by graphical and vectorial methods.

The second block deals with structural analysis, including such topics as beam deflections, structural instability, buckling problems and indeterminate structures.

The study of structural loads and forces often requires consideration of the effect of fluid flows. Block 3 investigates the problem of determining the forces exerted by fluids. Many examples and problems are discussed to do with, for example, the design of cars and aircraft, extreme wind forces on buildings and wave forces on offshore structures and pipelines.

The fourth block explores vibration dynamics and vibration analysis of one-, two- and multi-degree of freedom systems, mode shapes and the like.

See Section A of How to Apply

Mathematical methods and fluid mechanics

Course code MST322

Details of this course are on page 37.

Heat transfer: principles and applications

Course code T333

Half credit Third level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Set book Personal tutor
Assignments and exam

Certification

Course certificate

Could count towards a BA degree

This course will give you a thorough understanding of the principles of heat transfer and develop the skills you need in order to carry out engineering analysis and design in industrial and other contexts.

Who is the course for?

This course is for anyone who wants an introduction to heat transfer or is considering the analysis and design of heat transfer systems.

Previous knowledge required

You must be familiar with the laws of thermodynamics and the analysis of simple thermodynamics systems.

Contents

The course teaches principles of heat transfer, including conduction, convection and radiation, and the necessary mathematical background to allow the analysis of heat transfer problems. We consider the scope and limits of various methods of analysis, including modern methods that rely on computers, so that you acquire skills appropriate to modern industrial practice. The analysis leads to study of the design and optimization of devices such as heat exchangers and of complete thermal systems. Case studies include examples drawn from industry.

See Section A of How to Apply

Environmental control courses

Environmental control and public health (T234) and *Environmental monitoring and control* (T334) may also be of interest to you. For details please see page 31, in the Environmental Education section.

MANUFACTURING

Manufacturing: Management and Technology courses

There are courses in the Manufacturing: Management and Technology brochure which may also be of interest to you (see page 25).

Resource utilization: energy and materials

Study pack code PT612

Fee £288.18 (inc. £23.18 VAT)

About 50 hours of study

Subject knowledge required

Some

The pack includes

Study texts Audio and video cassettes

The pack looks at the efficient use of resources in manufacturing industry. It emphasizes the interdependence of the various resources that go into manufacturing, and the necessity of looking at production processes in a 'systemic' way in order to make the best use of the resources.

Who is the pack for?

Works directors, production managers, engineers, energy managers, and anyone working in industry whose day-to-day responsibilities are concerned with the efficient use of resources in manufacturing processes.

Contents

The texts cover the following areas:

Setting the scene
Energy efficiency
Using materials wisely
Decisions, decisions

There is also a financial appraisal booklet, and the pack uses case studies taken from industry, as it is important to relate the methods it teaches to industrial practice.

See Section B of How to Apply

TRAINING COURSES IN COMPUTING AND MANUFACTURING

More than 6,000 employees from over 1,200 organizations have used the postgraduate-level courses from the Open University's Computing for Commerce and Industry (CCI) and Manufacturing: Management and Technology (MMT) programmes to bring up to date their skills and knowledge in areas relevant to the success of their business, without being away from home or work for extended periods.

Each course is a six-month structured study period leading to a course certificate. The course certificates can be combined to make up a diploma, which can be converted to an MSc degree by successful completion of a project.

The University can offer in-company tutorial support to companies using the courses, perhaps as part of a staff development or other training scheme.

The courses available at present are:

Computing for Commerce and Industry (CCI)

Software engineering (M860)
Computer architectures and operating systems (PMT601)
Real-time monitoring (PMT602)
Real-time control (PMT604)
Project management (PMT605)
Human-computer interaction (PMT607)
Computer-aided engineering (PT616)
Intensive Prolog (DM862)
Knowledge engineering (DM864)
Switching for digital telecommunications (T820)

Manufacturing: Management and Technology (MMT)

Manufacture, materials and design (PT610)
Structure and design of manufacturing systems (PT611)
Manufacturing management (PT613)
Polymer engineering (PT614)
Computer-aided engineering (PT616)
Quality techniques (PT619)
Implementation of new technologies (PT621)
Quality systems (PT622)

Courses start at the beginning of March, May and November, with application closing dates six weeks before these dates. If you would like to know more about these courses and have not already got CCI and MMT programme brochures, please ask:

Customer Services Department

PO Box 481

The Open University

Walton Hall

Milton Keynes

MK7 6BN

Telephone 0908 653917

Fax 0908 655159

MATERIALS

Materials in action

Course code T201

Full credit Second level

Fee £425

Study period

Feb-Oct 1992 About 12-15 hours a week

Subject knowledge required

Some

The course includes

Study texts Video cassettes TV programmes
Residential school Personal tutor
Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

This is an introductory course which teaches materials science as an effective tool in technological decision-making – selecting materials, choosing process routes and designing products.

Who is the course for?

This course is for engineers from almost every industry who want to understand more fully the materials from which their products are fashioned. It is not recommended if you have a visual handicap or seriously impaired manual dexterity.

Previous knowledge required

Roughly speaking you should have a working knowledge of mathematical modelling and physical science to A-level standard. If you would like to know more about the previous knowledge required for successful study of this course, and would like to assess your ability to recognize and cope with the ideas, notation and language used, you can obtain a self-diagnostic test. Write asking for the T201/T253/T254/T255 diagnostic test, and enclosing a stamped self-addressed A4 or A5 envelope, to: The T201/T253/T254/T255 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

This course explores the interrelationships between structure, properties and processes for a wide range of materials including plastics, metals, ceramics, glass, composites and some natural materials. It sets the technical considerations firmly in the context of the economic and commercial factors which govern the successful use of materials.

The course is in four parts. The first introduces structure/property relationships and other fundamental scientific

Materials for electronics

Course code T253

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Video cassettes Residential school Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

The electrical and magnetic properties of materials are direct consequences of the behaviour of electrons within them. The exploitation of these properties in products of very wide-ranging functions calls for careful manipulation of materials to achieve many useful suites of properties. This course explains the scientific models needed to guide those manipulations and describes how they are commercially exploited.

Who is the course for?

The broad coverage of this course will make it interesting to those working in all fields of electronic engineering or teaching who are keen to understand more about the materials which enable functional goals to be met through electronic methods.

Previous knowledge required

Roughly speaking you should have a knowledge of maths, physics and chemistry to A-level. If you would like to know more about the previous knowledge required for successful study of this course, and would like to assess your ability to recognize and cope with the ideas, notation and language used, you can obtain a self-diagnostic test. Write asking for the T201/T253/T254/T255 diagnostic test, and enclosing a stamped self-addressed A4 or A5 envelope, to: The T201/T253/T254/T255 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

The first part of the course introduces the fundamental scientific and technological ideas that help us to understand many different materials. The second part discusses modern circuit-building technologies (printed, hybrid and integrated) and ways of providing circuit components at each level of scale. The potential and scope of electronic and magnetic transducers in measurements and control of several systems are explored. We look at the origins of technologically important

and technological ideas that help us to understand many different materials. The other three parts all build on this foundation. The second illustrates the breadth and diversity of materials which have been developed to meet load-bearing applications. In the third part the design process is charted from an initial concept to a detailed specification for manufacture. We study the four process routes of casting, forming, cutting and joining, before concentrating on decision-making in manufacturing with special emphasis on choice of process rate, costing and quality assurance. The last part is about the materials of electronic hardware: those which we exploit and process to produce special electrical, electronic and magnetic properties.

See Section A of How to Apply

Stress on materials

Course code T254

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Video cassettes Residential school Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

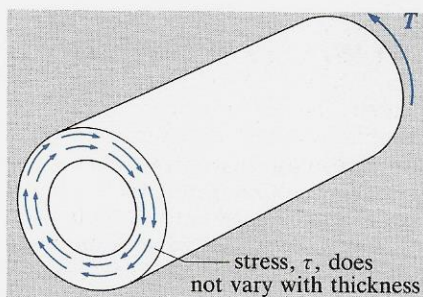
Choosing materials for a product depends on a mixture of technical and commercial considerations. Above all, if they are to perform satisfactorily in service the materials must have the required properties: for instance sufficient strength, electrical conductivity, transparency, or resistance to corrosion. Ultimately the properties of materials are determined by their constitution and internal structure. In turn the structure is strongly influenced by the processing history.

Who is the course for?

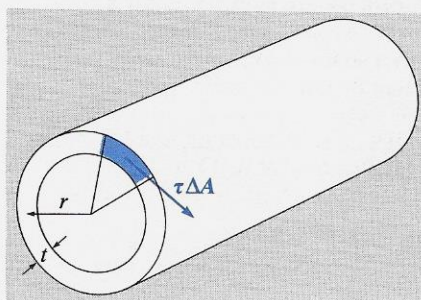
This course is suitable for those working, teaching or interested in the mechanical or civil engineering industry who want to develop their understanding of materials and materials choice.

Previous knowledge required

Roughly speaking you should have a knowledge of maths, physics and chemistry to A-level standard. If you would like to know more about the previous knowledge required for



The shear stress, τ , in a thin-walled tube under torque T



The shear force, $\tau \Delta A$, acting on an element of a tube

successful study of this course, and would like to assess your ability to recognize and cope with the ideas, notation and language used, you can obtain a self-diagnostic test. Write asking for the T201/T253/T254/T255 diagnostic test, and enclosing a stamped self-addressed A4 or A5 envelope, to: The T201/T253/T254/T255 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

The first of the two parts of the course introduces the fundamental scientific and technological ideas that help us to understand many different materials. The second part illustrates the breadth and diversity of materials that have been developed to meet load-bearing applications. The interrelationships between structure, properties, processing and function are emphasized, and are exemplified by short case studies of real products which also develop the theme of materials selection. The examples cover not only the conventional range of engineering materials such as steels, plastics and ceramics, but also high-performance materials such as advanced composites and high-temperature alloys, on the one hand, and more everyday materials such as textiles, paper and timber on the other. The frequent necessity of balancing good mechanical performance with requirements such as environmental resistance, cost, ease of processing and density of materials is highlighted.

See Section A of How to Apply

magnetic effects, working from the atomic scale up to complete magnetic components such as transformer cores and culminating in magnetic memory systems in computers and processors. We investigate several visual display technologies, with emphasis on the specifications needed to meet the expectations of the human viewer. An appreciation of semiconductor memory systems shows how appropriate micro-technology can improve performance. Finally these topics are brought into an entrepreneurial context – the real world: we look at new superconductors as a study of the interplay of manufacture and marketing of innovative products.

See Section A of How to Apply

Materials in manufacturing

Course code T255

Half credit Second level

Fee £275

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Some

The course includes

Study texts Video cassettes Residential school Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

Who is the course for?

The course is particularly suitable for product engineers and managers who have an interest in the conversion of materials into useful products. It is also suitable for engineering teachers and others with a general interest in manufacturing.

Previous knowledge required

Roughly speaking you should have a knowledge of maths, physics and chemistry to A-level. If you would like to know more about the previous knowledge required for successful study of this course, and would like to assess your ability to recognize and cope with the ideas, notation and language used, you can obtain a self-diagnostic test. Write asking for the T201/T253/T254/T255 diagnostic test, and enclosing a stamped self-addressed A4 or A5 envelope, to: The T201/T253/T254/T255 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

Choosing a material and a processing route for the manufacture of a product

involves striking a balance between what the product must do and the means by which its form can be created. The response of a material to external stimuli is determined by its structure and this gives us a way of predicting both how best to form it into shapes and how it will perform in use.

The first part of the course introduces material structure/property relationships and the other fundamental scientific and technological ideas that help us to understand many different materials. The second part builds on the idea that product design, choice of process and selection of materials are not isolated activities.

The design process is charted from an initial concept through to a detailed specification for manufacture. We study the four principal classes of material processing – casting, forming, cutting and joining – and look at those areas of manufacturing operations that influence the manufacturing process. These include marketing, costing and quality assurance. Finally, a case study shows how manufacturing decisions to do with product design, process choice and material selection lead to a diversity of products and manufacturing solutions in a highly competitive market.

See Section A of How to Apply

Failure of stressed materials

Course code T353

Half credit Third level

Fee £295

Study period

Feb–Oct 1992 About 7 hours a week

Subject knowledge required

Substantial

The course includes

Study texts TV programmes Home kit Personal tutor Assignments and exam

You will need

Calculator

Certification

Course certificate

Could count towards a BA degree

When materials are put under stress they sometimes fail, with costly or tragic results. To prevent such failures engineers need to know all the ways in which load-bearing materials can fail. This course explains the principal modes of such failures, and the conditions in which they can occur.

Who is the course for?

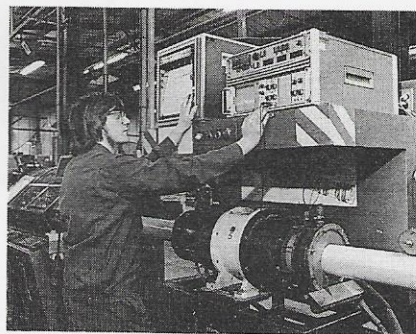
The course is particularly suitable for those who have an interest in mechanical, civil, chemical or materials engineering.

Previous knowledge required

The course draws upon the complementary disciplines of mechanics and materials science, and calls for some knowledge of both. You are expected to be conversant with torsional and bending stresses, the plotting of shear force and bending moment diagrams and Mohr's circle construction for two-dimensional stresses. Self-test papers are available if you would like to make sure you are adequately prepared. Send an A4 or A5 stamped addressed envelope to: The T353 Course Manager, Faculty of Technology, The Open University, Milton Keynes MK7 6AA.

Contents

Metals, plastics and ceramics in a variety of loading conditions are examined. All the modes of failure considered in the course involve fracture or an excessive change of dimensions, and the main emphasis is on slow and fast crack growth. The theory of linear elastic fracture mechanics is introduced to describe such events.



'Rotasonic' ultrasonic scanning of the extruded pipe thickness

A case study is used to present each mode of failure. Most are of service failures; others are based on design problems. An example of the first kind is the failure of a colliery lift, while the second is a study of how thick the walls of a polyethylene gas pipe must be to avoid failure by creep, creep rupture and environmental stress cracking. The last section of the course asks you to solve a problem, either of 'failure investigation' or of 'design'.

See Section A of How to Apply

Electronic materials and devices

Course code T393

Details of this course are on page 78.

KEY TO COURSE AND STUDY PACK HEADINGS

Credit rating

In this brochure the description 'full credit' or 'half credit' is an indication of the amount of work a course will require over the academic year; full-credit courses take roughly twice as much as half-credit courses.

Most of the courses in this brochure could be counted towards the University's BA degree if you complete them successfully. Each course would count as a half or a full credit towards the six credits required for the degree. If you decided that you wanted to study for a BA you would need to register as an undergraduate student, successfully complete a foundation course in that programme and ask for the courses you passed as an associate student to be counted towards your degree.

Study levels

The courses in this brochure are described as second level, third level, professional and postgraduate. The University also offers 'foundation' courses but, because of the way government subsidy is applied at present, you can study them only if you are registered as an undergraduate student. (There are certain exceptions but these are for specially negotiated schemes.) Since second-level courses build on foundation courses in terms of

study skills and sometimes also in terms of content, you may like to ask your Regional Enquiry Service for fuller information before embarking on one. This would be particularly wise if you have no recent experience of study or are intending to study in a subject area which is relatively new to you. Third-level courses are, of course, even more demanding. They also tend to expect you to take a more independent approach to learning than second-level courses do, and to rely less on course texts, broadcasting and tutorials.

Study period

For study packs we give you an estimate of the total number of study hours you are likely to need to work through the study materials. For courses we estimate the number of study hours the course is likely to take each week; the pacing of your study will be determined to some extent by the requirement to produce regular written work.

Subject knowledge required

This notes the amount of knowledge you are expected to have of the content area covered by the course or study pack. The warnings about study levels given above still apply.

The course includes...

Most of the things listed here are provided within the course fee, but *set books* and *residential schools* must be paid for separately. Most residential schools in this brochure are one-week schools which take place in July or August. The fee for a one-week residential school in 1991 is £143 and is likely to rise with inflation. Set books should cost not more than £58 for a full-credit course or £29 for a half credit (they often cost much less).

The pack includes...

Study packs are often available in different forms, depending for instance on whether they are for individual or group study or whether they have optional assessment. If you are in any doubt, please ask The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 653338 after office hours).

You will need...

This lists anything you will have to provide for yourself, perhaps a calculator or a microcomputer. Radio, television, audio and video cassette players are not mentioned here, but of course you will need them if your course includes broadcasts or cassettes.

Courses in this section deal with subjects of general interest and include a wide range of contributory disciplines. This enables common themes or topics to be examined from various points of view, using skills and knowledge derived from both arts-based and science-based academic areas. No previous knowledge of any one subject or discipline is assumed and students come to these courses with widely differing backgrounds, experiences and academic interests.

CONTENTS

Health and disease	85
Environment	85
Third World development	85
Issues in women's studies	86

Health and disease

Course code U205

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV programmes Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree
Part of the Health and Social Welfare
diploma programme – see page 63

Who is the course for?

The course is for anyone who has a broad interest (professional or lay) in taking a multidisciplinary approach to the study of national and international issues in health and disease.

Previous knowledge required

You are not expected to have any knowledge of the contributing disciplines (biology, sociology, history, economics, politics, statistics), and the texts include a basic guide to methods and concepts.

Contents

The eight course books are each concerned with a particular aspect of health and disease, discussed from both biomedical and social points of view. Topic areas include research methods; the evolution of scientific medicine; comparisons between UK and Third World patterns of disease; effects of social inequalities on health; the biological basis of health and illness; health from birth to old age; experiencing and explaining some serious health problems such as cancers, mental illness, AIDS; historical and international comparisons of health care systems; innovation, screening and prevention of disease.

See Section A of How to Apply

Environment

Course code U206

Details of this course are on page 28.

Third World development

Course code U208

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Study texts Set book Audio cassettes
TV and radio programmes Residential school
Personal tutor Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This course is for anyone concerned with the Third World; people teaching or writing about the Third World; people who have worked or intend to work in developing countries. No previous knowledge is required.

Content

Problems faced by people in Third World countries include hunger, poverty, disease, environmental degradation and over-population. This course asks what can be done about Third World development, and how these problems can be tackled. Using a variety of academic disciplines, it helps you to understand the origins of the problems and to analyse the strategies suggested to overcome them.

The course is in four parts each consisting of a textbook, a study guide, TV and radio programmes, audio cassette and supplementary material. There is also a set book and the *Third World Atlas*. Part I introduces the main issues and problems in developing countries and places them in their historical context. Part II is about the

'UNIVERSITY' COURSES

process of development through industrialization and its social and economic consequences. Part III is concerned with food production and people's survival, particularly in the countryside. Part IV considers what actually happens in development policy, examining how governments influence economic development. The *Third World Atlas* supplies historical, political and economic facts to help you compare the development experiences of countries throughout the world.

See Section A of How to Apply

Issues in women's studies

Course code U207

Full credit Second level

Fee £425

Study period

Feb–Oct 1992 About 12–15 hours a week

Subject knowledge required

None

The course includes

Readers Set book Study guides
Audio cassettes TV and radio programmes
Residential school Personal tutor
Assignments and exam

Certification

Course certificate
Could count towards a BA degree

Who is the course for?

This is an interdisciplinary course that introduces the principal theoretical debates in women's studies. It should appeal to anyone who is interested in thinking about the nature of women's experience and the position of women in society. Although it embraces a variety of disciplines, the course does not assume that you have any knowledge of women's studies or any particular academic background. The residential school will give you an opportunity to extend and develop your understanding of issues raised in the course material.

Contents

The course enables you to explore the meaning of gender in women's lives, to analyse variations in the position of women in different times and cultures and to evaluate possible explanations for them. An important point of consideration is the interrelationships of social inequalities – gender, race, class and age – as they affect women, and the questions they suggest about the particularity of women's experience.

The course is presented in four readers with study guides. *Knowing women: feminism and knowledge* presents and analyses material which has been influential in the development of feminist theory and contributed to the

process through which women have come to know about themselves.

Defining women: social institutions and gender divisions examines the social, economic and political position of women in contemporary societies.

Inventing women: science technology and gender asks how those areas of knowledge and expertise called 'science' and 'technology' have contributed to

definitions of 'women' and 'female' and have helped to construct a gendered social world. *Imagining women: cultural representations and gender* looks at a variety of cultural practices in different parts of the world in order to examine images both of and by women.

See Section A of How to Apply

COMMUNITY EDUCATION

Study packs and other materials in this area are intended to help people with learning related to their everyday lives and roles in the family, workplace and community. They have been developed in collaboration with relevant agencies and through involvement with many community groups and projects. Those marked with an asterisk have optional computer-marked assessment.

Family and school

Getting ready for pregnancy (*study pack*, P901S)
Understanding pregnancy and birth (*study pack*, P902S)
Pregnancy and birth (*study pack*, P960)*
Living with babies and toddlers (*study pack*, P961)*
Women and young children (*discussion pack*, P593)
The pre-school child (*study pack*, P912)*
Y plentyn bach (*book*, P912BW)
Childminding (*study pack*, P971)
Childhood 5–10 (*study pack*, P913)*
Parents and teenagers (*study pack*, P914)*
Parents talking – the developing child (*discussion pack*, P596)
Parents talking – family relationships (*discussion pack*, P597)

Health and lifestyle

Health choices (*study pack*, P921)*
Healthy eating (*study pack*, P964)*
Look after yourself (*discussion pack*, P595)
Health and retirement (*discussion pack*, P599)

Work and retirement

Work choices (*study pack*, P942)*
Co-operative working (*study pack*, P944)
Planning retirement (*study pack*, P941)*
Learning later (*handbook*, P982)

Training

Building portfolios – the trainees' view (*video pack*, P981)
Building portfolios – the trainers' view (*video pack*, P983)
Talking with young people (*study pack*, P525)
How we see the world (*study pack*, P524)

Home and neighbourhood

Consumer action kit (*pack*, CE9300)
Living choices (*study pack and video cassette*, P935)
An introduction to credit unions (*study pack*, P954)

Group work

Better meetings (*handbook*, P950)
Group notes (*booklet*, CES909)
Leading a group (*training pack*, CE0009)

If you would like to know more about these courses, study packs and other materials and have not already got the Community Education brochure, please ring the Central Enquiry Service (0908 653231) and it will be sent to you as soon as possible.

HOW TO APPLY

This part of the brochure is divided into two sections:

- *Section A* How to apply for nine-month courses
- *Section B* (page 88) How to order study packs

Please read the appropriate section carefully before completing your application.

SECTION A HOW TO APPLY FOR NINE-MONTH COURSES STARTING IN FEBRUARY 1992, USING THE GREEN FORM

The courses and when to apply

All nine-month degree-level courses begin in February and end with an optional examination in October.

The application period runs from 1 May to 7 October 1991: applications are not accepted after the closing date. You are advised to apply early even if you are not certain that you will eventually be able to take the course, as you will be given a period in which to decide whether or not to accept your offer of a place. Regional Enquiry Service advisers will be happy to discuss your plans with you either before or after you apply; telephone numbers and addresses are given on page 90.

There are no academic qualifications for entry but you must be over 18 and resident in an EC country on 1 January 1992 (but see 'Overseas residents' on page 88). You can study up to two credits' worth of Open University courses in any one calendar year.

Filling in the green application form

Before you complete your application, please read this section and the course description carefully and take particular note of the level of previous knowledge your course requires.

Any personal information you give on the application form will be treated as confidential. We ask certain questions about your background to help us assess how successful our equal opportunity policy is in practice, but you are under no obligation to answer them. If you decide not to, your chance of being offered a place will not be affected.

The details you supply give the University information for planning, admissions advice and counselling, as well as for registering you on a course.

If you wish receipt of your application to be acknowledged, you should enclose the completed acknowledgement card AP/ACK/1 with your form.

Once you have applied

You should hear within six weeks whether the University can offer you a place or if the course you have chosen is over-subscribed. If you do not hear anything within this period, you should write to the Associate Student Central Office giving your name, address and the date on which you sent the form.

You will be sent detailed notes about any courses you are offered. These will give you a better idea of the academic standard and content of the course before you accept the offer of a place or pay any fees.

Change of address

If you change your address after sending in your application, please write and let us know. If this means a change of region and study centre, please indicate your new region and choice of study centre.

Registration as an associate student

If you accept your course offer by returning a signed registration form by the appropriate date, you will become a registered student. Fee payment alone does not secure registration.

Registration for diplomas

Two of the University's diplomas are described in this brochure, the Advanced Diploma in Criminology (Prison Studies) (page 55) and the Professional Diploma in Social Work with Deaf People (page 56).

When you apply for the Part A course(s) of these diplomas you should state that you intend to go on to Part B, but there is no automatic allocation to diploma courses: you must apply each year for the next course you want to take. If there are restrictions on entry to the Part B courses, the University may not be able to offer you a place.

Some of the courses in this brochure can also count towards other academic awards. Please ask for the Education or Health and Social Welfare brochure or seek advice from your Regional Centre.

Fees

Your offer of a place on a course will tell you how and when to pay the course fee. *By accepting a course offer, you become registered and give a legal undertaking to the University to pay fees in full as required.* Course tuition fees are given above each course description. Remember that they do not include any residential school fee.

Fees for a few courses have not yet been confirmed. If you are interested in one of these, please ask the Central Enquiry Service about the fee.

The University reserves the right to change fees at any time without notice, although every effort will be made to warn you of any increase.

How to pay

You must pay 20% of the course fee by the date given in your offer letter. The rest of the course fee is due on 28 January 1992 and can be paid in a single sum (you can use a credit card for this) or in eight equal monthly instalments from January to August, using a standing order or bank giro (but not a credit card).

Financial awards from the Open University

The University recognizes that fees, although kept as low as possible, may place courses beyond the means of some people. There are limited funds available for the unemployed and those on low incomes to help with the payment of course fees. You can have awards for not more than two credits, with a maximum of one credit each year, so that as many students as possible can benefit from the funds. These awards are available only to United Kingdom residents.

More information about financial awards is available in the booklet *Financial Support for Open University Study*.

Receipts

The University issues receipts only on request.

Refund of fees

The University must keep to the minimum any financial loss arising when students withdraw from courses. We do, however, understand that you may find, before your course begins, that you will be unable to study, and the following policy applies:

- If we receive written notification of withdrawal by 28 January 1992, the University will waive 80% of the course fee. You must still pay 20%.
- If we receive written notification of withdrawal by 28 February 1992, the University will waive 70% of the course fee. You must still pay 30%.
- After 28 February 1992 waivers will be given only in very exceptional circumstances such as serious illness, bereavement or maladministration by the University which prevents you from studying satisfactorily.
- Fees cannot be carried forward to pay for future courses, nor is it possible to carry forward an offer of a place.
- If you make payments for two courses but decide later to study only one, the payment cannot be transferred from one course to another or refunded (except as above).
- If you register as an associate student because you could not get a place on a 1992 undergraduate foundation course, but are then offered a late foundation course place, you can ask for any associate fees you have paid to count towards payment for your foundation course.

Group bookings

Organizations that want to sponsor several students on courses are welcome to make group bookings. Discounts are available. You can get a booking form and details from the Associate Student Central Office, The Open University, PO Box 76, Milton Keynes MK7 6AN. Please state which courses you are interested in. Applications for group bookings for 1992 courses should be made as early as possible and by no later than 31 October 1991.

If you register as part of a formal group booking, your sponsor will be invoiced both for the course fees and for any residential school fees.

Sponsorship by local authorities and other organizations

Unlike many full-time university students, who are entitled to apply to grants from their local education authority, as a part-time student you are not eligible. Any financial assistance from your local authority will be entirely at its discretion. You are strongly advised to enquire early about the possibility of a grant to cover a part or all of your course fees. You should approach the local education authority in whose area you will be living on 31 October 1991.

Local education authorities which are prepared to give financial assistance to associate students will generally require you to pay the fees to the University before they make any payment to you. Similarly, any assistance towards the residential school fee is unlikely to be given until you have paid the fees and attended the school.

If your ability to study depends upon your LEA reimbursing you for the course fees or sponsoring you as part of a group booking, you *must* confirm these arrangements with the authority before you apply. You cannot make your acceptance of a place conditional upon obtaining a grant or sponsorship at a later date.

Important note

Once registered, you become responsible for payment of your own fees by the dates specified. Any sponsorship by a third party is a matter between you and that third party. It is your responsibility to ensure that your sponsor makes payments according to the correct schedule.

Invoices are always sent direct to the applicant, except when special arrangements have been made in formal group bookings. You can ask the Student Fees Office at any time for a statement of your fee account and use it as proof of payment.

Full-time students at other institutions

Full-time students registered at other educational institutions must send, with their application form, written permission from that institution to study with the Open University.

Overseas residents

The University will be pleased to receive applications, for most of the courses described in this brochure, from residents in any European Community country. Since different study facilities are offered in different countries, you must ask for full information before you apply. The offices to ask are:

- Belgium, Luxembourg or the Netherlands – Region 09
- Republic of Ireland – Region 12
- Other EC countries (or elsewhere in Europe) – Region 06
- BFPO (Germany and Cyprus only) – Region 04 and 07

This information may well amend the details given in this brochure. The main differences are likely to be in the areas of:

- Fees** Extra local and supplementary fees must be paid with the first instalment of the tuition fee. These fees are stated in the further information.
- TV and radio programmes** Access to broadcasts is not guaranteed except in parts of the Republic of Ireland.
- Local tutorial and counselling** Arrangements will depend on the number of students in the area.
- Residential school** If your course has a residential school you will have the same obligation to attend as if you lived in the UK (unless you do not want any certification and surrender your entitlement to attend).
- Choice of courses** Some courses described in this brochure may not be available to you. You will probably not be allowed to register for the following courses, because they have home kits which, because of export and insurance regulations, cannot be exported or used outside the United Kingdom: A241*, DT200**, M345, S102, S203, S236, S237, S246, S247, S271, S298, S339, S344, S365, SD206, ST291, T202, T223, T233, T234, T264, T353, T363, T394. This list may change and you should ask the Associate Student Central Office, The Open University, PO Box 76, Milton Keynes MK7 6AN for up-to-date information before applying.

* The kit for A241, a small electric reed organ, is optional. Although the kit cannot be sent or taken overseas, you may take this course if you can have daily use of the alternative equipment described on page 15.

** If you have a suitable home computer and access to a modem you may be able to take this course. In most other particulars the regulations that apply in the UK will also apply to European residents.

Students' Association

All registered students become members of the Open University Students' Association (OUSA) and will be sent information about its activities.

SECTION B HOW TO ORDER STUDY PACKS, USING THE BLUE FORM

The study materials

The packs of study materials described in this brochure are available in several forms. Individual descriptions tell you which of the following are available for each pack:

- Individual study packs** These usually contain books or leaflets, and may include other materials such as video or audio cassettes. Some packs consist mainly of experimental equipment or video cassettes.
- Group work packs** These usually offer enough material for a group of six people working together, and sometimes include group leader's notes. They are usually substantially cheaper than six individual sets of material.
- Tutor packs** These contain resource material (sometimes including a video cassette) for leading group work or for use in training, and often an individual study pack for the group leader's use.
- Video cassettes** Some packs have associated video cassettes which are available separately on sale or loan. Unless you are told otherwise, cassettes are available only in VHS format. Special conditions apply whether you buy or borrow. These are:

The programmes are copyright, and may not be broadcast or copied in any way.

Cassettes may not be resold, or hired to other organizations. You are responsible for checking that the cassette supplied is correct and in order, and for informing us promptly about any damaged or incorrectly supplied cassette.

We cannot accept responsibility for loss resulting from late or non-delivery of tapes.

Cassettes may not be used at meetings where an admission fee is charged for the gain of the purchaser or borrower, nor as part of a commercial fee-paying course.

Tapes which are borrowed are on loan for a stated period, and the copyright rules and use restrictions apply as if they were purchased. Any fee charged for loan is to cover the costs of operating the loan service. It may sometimes be possible to buy a cassette you have borrowed, on payment of an extra fee.

If you do not return a borrowed cassette at the end of the loan period or when asked, you will be billed for its full value.

Study material on tape for students with disabilities

Audio cassette recordings have been made of the printed materials from the study packs listed below. They can be provided free of charge to purchasers of the pack. If you would like recordings because you have a disability, please attach a letter to your order form. Your order will be dealt with in the usual way, and your letter will be passed to the office that distributes the recordings. If the pack you are interested in is not listed here, it may be possible to make a recording for you. Please ask the Office for Students with Disabilities, PO Box 79, The Open University, Walton Hall, Milton Keynes MK7 6AR, telephone 0908 653745.

The recordings available are:

- PA710 *W. B. Yeats*
- PA711 *James Joyce*
- PA721 *Introduction to Buddhism*
- PA720 *Introduction to Hinduism*
- PA730 *East Anglian studies: nineteenth century*
- PA786 *Looking into paintings*
- PD770 *The changing countryside*
- PU712 *Women, writing and culture*

Reduced fee schemes

There are reduced fee schemes to enable the unemployed and those on low incomes to buy study packs. For more information about this you should ask your Regional Centre or the Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH, telephone 0908 655954.

Money back guarantee

If, when you receive the material, you decide it is not suitable for you:

- Make sure that the material is complete and in mint condition.
- Tell the Learning Materials Sales Office (LMSO), within 14 days of receiving the goods, that you intend to return them. LMSO will send you an 'authority to return' note.
- Return the goods, within 7 days of receiving the note, in the original packing to the address on the note. Enclose both the 'authority to return' and the original despatch note.
- Please keep proof of posting. You will have to claim from the Post Office if the goods do not reach us, as we will not give any refund.

Your payment will then be refunded. We cannot make refunds if you do not get in touch with LMSO within fourteen days of receiving the materials.

Video cassettes and audio tapes purchased separately are not covered by this guarantee but will be replaced if faulty.

If you receive damaged or faulty goods you should return the fault card enclosed in the pack within three days of receipt. Please do not return goods to the Learning Materials Sales Office.

Using the blue form

Conditions of sale

All material you buy with this order form is sold subject to the University's standard conditions of sale. You can get a copy of these from the Learning Materials Sales Office.

Availability

You can use the blue form to order study packs at any time of year. Usually you will receive your order within thirty days. If items are out of stock we will let you know when they are expected. Please do not order new packs before the dates given: we cannot accept orders in advance.

Overseas orders

If you want to have material sent abroad please ask the Learning Materials Sales Office for a price, which will depend on the necessary carriage charges. You can pay over the telephone by Access, Mastercard, Visa or Switch.

Discounts

There is a discount scheme for bulk purchases of some study packs described in this brochure. If the pack description says that the discount scheme is available, you should pay the full list price: the discount will be calculated by the Learning Materials Sales Office. If you have paid by cheque you will receive a refund. Credit card purchasers will be debited the purchase price less discount, and credit customers will be invoiced similarly.

Discounts are based on the *total value of the items ordered*. They are:

- Orders worth £100 and over – 10%
- Orders worth £500 and over – 20%

VAT

VAT is charged on some packs. If so, the price shown includes VAT at the standard rate on either the net price, or a proportion of the net price if Customs and Excise has assessed the pack as a mixed supply.

How to pay

The prices of packs are given in each pack description. They include delivery in the United Kingdom. *These prices may increase in 1992; please ask the Learning Materials Sales Office.* There are three ways to pay.

Cash with order

Please make cheques and postal orders payable to 'The Open University'. Cheques must be drawn in sterling on a UK-based bank. Sterling cheques drawn on non-UK banks are subject to a clearing charge (£7.50 at present) which must be included in your total payment.

Credit card

If you are paying by Access, Mastercard, Visa or Switch please enter your credit card details in the appropriate section on the blue form.

Credit orders

Only official company or organization order forms or the equivalent can be accepted. Please attach the blue form to your order and quote ref. AS10 on your own order form. You will be invoiced when the goods are despatched.

Enquiries

Any enquiries about orders for packs should be sent to: The Learning Materials Sales Office, The Open University, PO Box 188, Milton Keynes MK7 6DH (telephone 0908 652152, or 0908 653338 after office hours).

REGIONS, REGIONAL CENTRES AND STUDY CENTRES IN 1991

You can get a lot of information from the Enquiry Services in the University's Regional Centres. Their addresses, the areas covered by each region (see map on page 92) and the study centres are listed here. Tutorials are not held in all the study centres for every course. If you need information about which study centres are to be used for a particular course please telephone your Regional Enquiry Service.

London Region 01

The Open University
London Region
Parsifal College
527 Finchley Road
Hampstead
LONDON NW3 7BG
Tel: 071 794 0575

Area covered

Greater London

Acton W3	008
Bloomsbury WC1	002
Carshalton	022
City (Angel) EC1	227
Cranford (Hounslow)	016
Croydon	007
Eltham SE9	228
Enfield (Southgate) N14	010
Harrow	012
Havering	014
Hendon NW4	001
Kingston	017
London School of Economics	231
Mallet Street (Birkbeck)	225
Marylebone Road	230
Mile End E1	020
New Cross	234
Norwood SE19	233
Orpington	005
Paddington NW1	235
Pimlico SW1	238
Regents College	232
Strand WC2	229
Tottenham N15	011
Twickenham	021
Wandsworth SW15	237
West Hampstead NW3	226

South Region 02

The Open University
South Region
Foxcombe Hall
Boars Hill
OXFORD OX1 5HR
Tel. 0865 327000

Sub-centre

Winchester
Tel. 0962 867969

Area covered

Berkshire, Buckinghamshire,
Channel Islands, Dorset,
Hampshire, Isle of Wight,
Oxfordshire, part of Wiltshire

Abingdon	025
Aylesbury	026
Banbury	027

Basingstoke	028
Bournemouth	030
Bracknell	031
Fareham	305
Farnborough	037
Guernsey, C.I.	306
High Wycombe	040
Jersey, C.I.	303
Maidenhead and Windsor	054
Milton Keynes	029
Newbury	041
Newport, I.O.W	042
Oxford	043
Poole	044
Portsmouth	045
Reading	046
Salisbury	048
Slough	049
Southampton	050
Weymouth	053
Winchester	035
Witney	055

South East Region 13

The Open University
South East Region
St James's House
150 London Road
EAST GRINSTEAD RH19 1ES
Tel. 0342 327821

Area covered

Kent, Surrey, East Sussex,
West Sussex

Addlestone	052
Brighton	004
Broadstairs	023
Camberley	032
Canterbury	006
Chichester	033
Crawley	034
Dartford	287
Eastbourne	292
Ewell	036
Folkestone	291
Gillingham	018
Guildford	038
Maidstone	288
Redhill	047
St Leonards-on-Sea	013
Staines	051
Tonbridge	024
Worthing	056

South West Region 03

The Open University
South West Region
41 Broad Street
BRISTOL BS1 2EP
Tel. 0272 299641

Sub-centre

Plymouth
Tel. 0752 228321

Area covered

Avon, Cornwall, Devon,
Gloucestershire, Somerset,
Scilly Isles, most of Wiltshire

Barnstaple	057
Bath	058
Bristol (Clifton)	060
Bristol (Fishponds)	295
Cheltenham	063
Chippenham	064
Exeter	065
Gloucester	066
Plymouth	067
Redruth	068
St Austell	069
Swindon	071
Taunton	072
Torquay	073
Weston-super-Mare	074
Yeovil	075

West Midlands Region 04

The Open University
West Midlands Region
66-68 High Street
Harborne
BIRMINGHAM B17 9NB
Tel. 021 426 1661

Area covered

Hereford and Worcester,
Shropshire, most of Staffordshire,
Warwickshire, West Midlands

Birmingham (Harborne)	076
Birmingham (Selly Oak)	091
Coventry	078
Dudley	079
Hereford	080
Kidderminster	082
Leamington Spa	083
Newcastle-under-Lyme	090
Nuneaton	084
Redditch	085
Rugby	086
Shrewsbury	087
Solihull	088
Stafford	089

Sutton Coldfield	092
Telford	093
Walsall	094
Wolverhampton	095
Worcester	096

East Midlands Region 05

The Open University
East Midlands Region
The Octagon
143 Derby Road
NOTTINGHAM NG7 1PH
Tel. 0602 473072

Area covered

Most of Derbyshire, Leicestershire,
Lincolnshire, Northamptonshire,
Nottinghamshire,
South Humberside, part of
Staffordshire, (Burton-on-Trent area)

Alfreton	308
Boston	097
Burton-on-Trent	098
Chesterfield	099
Derby	100
Grantham	101
Grimsby	102
Ilkeston	103
Kettering	104
Leicester	105
Lincoln	107
Loughborough	108
Louth	106
Mansfield	109
Matlock	114
Melton Mowbray	110
Newark	113
Northampton	111
Nottingham	112
Scunthorpe	115
Stamford	309
Worksop	116

East Anglian Region 06

The Open University
East Anglian Region
Cintra House
12 Hills Road
CAMBRIDGE CB2 1PF
Tel. 0223 64721

Area covered

Bedfordshire, Cambridgeshire,
Essex, Hertfordshire, Norfolk,
Suffolk

Bedford	117
Bury St Edmunds	118

Cambridge	119	Liverpool	167
Chelmsford	120	Macclesfield	180
Colchester	121	Manchester	168
Grays	122	Northwich	169
Great Yarmouth	123	Ormskirk	175
Harlow	124	Preston	171
Hemel Hempstead	239	Rochdale	172
Hitchin	125	St Helens	173
Huntingdon	126	Sale	152
Ipswich	127	Stockport	176
Kings Lynn	128	Warrington	177
Loughton	129	Wigan	179
Luton	130	Wirral (Birkenhead)	155
Norwich	131		
Peterborough	132		
St Albans	133		
Southend	134		
Watford	135		

Yorkshire Region 07

The Open University
Yorkshire Region
Fairfax House
Merrion Street
LEEDS LS2 8JU
Tel. 0532 444431

Area covered

North Humberside, North
Yorkshire, South Yorkshire,
West Yorkshire

Barnsley	136
Bradford	137
Dewsbury	139
Doncaster	140
Halifax	141
Harrogate	142
Huddersfield	143
Keighley	144
Kingston-upon-Hull	145
Leeds (Central)	146
Northallerton	244
Rotherham	147
Scarborough	148
Sheffield	149
Wakefield	150
York	151

North West Region 08

The Open University
North West Region
Chorlton House
70 Manchester Road
Chorlton-cum-Hardy
MANCHESTER M21 1PQ
Tel. 061 861 9823

Area covered

Cheshire, part of Derbyshire,
Isle of Man, Lancashire,
Greater Manchester, Mersey-
side

Accrington	325
Ashton-under-Lyne	153
Blackpool	157
Bolton	158
Chester	162
Crewe	163
Douglas, I.O.M.	164
Lancaster	165

North Region 09

The Open University
North Region
Eldon House
Regent Centre
Gosforth
NEWCASTLE UPON TYNE
NE3 3PW
Tel. 091 284 1611

Resource centres

Cumbria
The Open University
2 Sandgate
PENRITH
CA11 7TP
Tel. 0768 64720

Cleveland
The Open University
University of Leeds Adult
and Continuing Education
Centre
37 Harrow Road
MIDDLESBOROUGH
TS5 5NT
Tel. 0642 816227

Area covered

Cleveland, Cumbria, Durham,
Northumberland, Tyne and
Wear

Ashington	181
Berwick*	251
Carlisle	182
Darlington	183
Durham	184
Furness (Dalton)	154
Gateshead	185
Hartlepool	186
Kendal	324
Newcastle	187
South Tyneside (Boldon)	189
Sunderland	190
Teesside (Middlesborough)	191
Tynemouth (North Shields)	193
West Cumbria (Egremont)	192

* Local centre with limited
provision.

The Open University in Wales Region 10

The Open University in
Wales
24 Cathedral Road
CARDIFF CF1 9SA
Tel. 0222 397911

Area covered

Wales

Abergavenny	263
Abergele	197
Aberystwyth	194
Ammanford	260
Bangor Menai Centre	195
Barry	254
Bridgend	255
Cardiff	196
Connah's Quay	299
Harlech	257
Haverfordwest	530
Llandrindod	300
Merthyr Tydfil*	198
Newport (Gwent)	199
Newtown	262
Pontypridd	264
Swansea	201
Wrexham	203

The Open University in Scotland Region 11

The Open University in
Scotland
60 Melville Street
EDINBURGH EH3 7HF
Tel. 031 226 3851

Sub-centre

2 Park Gardens
GLASGOW G3 7YE
Tel. 041 332 4364

Area covered

Scotland

Aberdeen	204
Arran*	689
Ayr	205
Benbecula*	691
Campbeltown*	692
Clydebank	268
Cowal and Bute*	688
Cumbernauld	270
Dornoch*	687
Dumfries	206
Dundee	207
Edinburgh (Napier)	209
Elgin	274
Falkirk	211
Fort William*	693
Fraserburgh*	686
Galashiels	275
Glasgow (Glasgow College)	315
Glasgow (Queen's College)	316
Glasgow (Langside)	318
Greenock	276
Hamilton	217
Inverness	215
Islay and Jura*	690
Kirkcaldy	216
Kirkwall (Orkney)*	694

Lerwick (Shetland)*	695
Newton Stewart*	696
Oban*	697
Paisley	218
Perth	279
Skye*	698
Stirling	219
Stornoway*	699
Thurso	281

The Open University in Northern Ireland Region 12

The Open University in
Northern Ireland
40 University Road
BELFAST BT7 1SU
Tel. 0232 245025

Area covered

Northern Ireland's Area Boards
(Belfast, North Eastern,
Southern, South Eastern,
Western)

Armagh	220
Ballymena	221
Belfast	223
Coleraine	282
Enniskillen	320
Londonderry	224
Newtonabbey	319
Newtownards	222
Omagh	283

Overseas schemes

Belgium, Netherlands and
Luxembourg (region code 09)

Brussels	420
Luxembourg	422
The Hague	423

Republic of Ireland (region code
12)

Study centre code 700

All other EC countries

This scheme includes all EC
countries except the Benelux
countries and the Republic
of Ireland. Before you apply,
please ask Regional Centre
06 for information about
study centres.

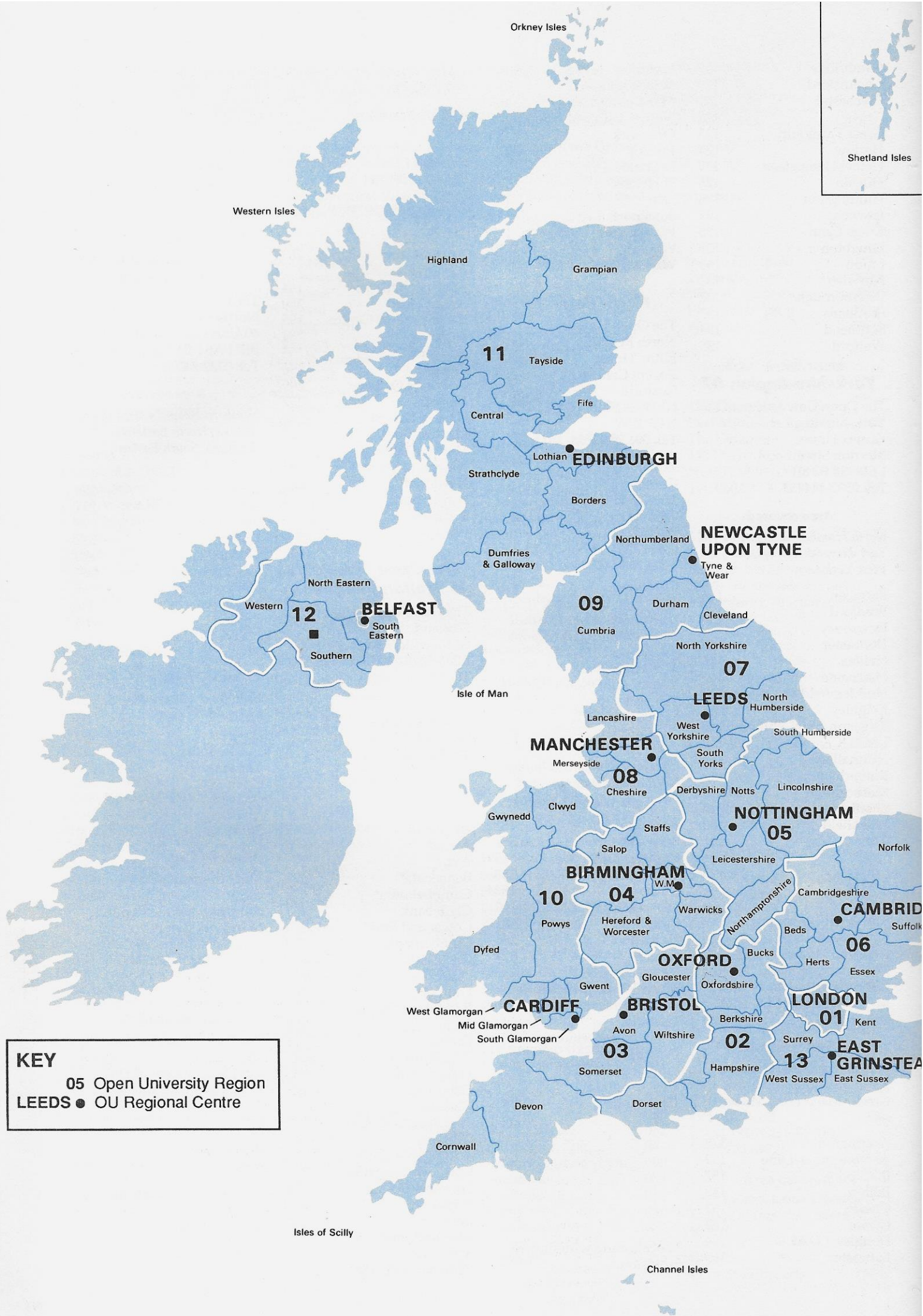
West Germany and Cyprus
(BFPO students only)

The West Germany and
Cyprus schemes are only for
serving members of HM
Forces and their relations.

West Germany (region code 04)
Berlin, Bielefeld, Hohnhe,
Rheindahlen
Berlin 421

Cyprus (region code 07)

Akrotiri	400
Ayios Nikolaos	401



Orkney Isles

Shetland Isles

Western Isles

Highland

Grampian

11

Tayside

Fife

Central

Lothian

EDINBURGH

Strathclyde

Borders

Northumberland

NEWCASTLE
UPON TYNE

Tyne & Wear

Dumfries & Galloway

09

Durham

Cleveland

North Eastern

Western

12

BELFAST

South Eastern

Southern

Cumbria

07

LEEDS

North Humberside

South Humberside

Lancashire

MANCHESTER

Merseyside

08

Cheshire

Derbyshire

South Yorks

NOTTINGHAM

05

Lincolnshire

Gwynedd

Clwyd

Staffs

Salop

BIRMINGHAM

W.M.

04

Warwicks

Hereford & Worcester

03

Powys

Dyfed

Gwent

Gloucester

02

Oxfordshire

Berkshire

01

Cambridgeshire

Beds

Herts

Essex

06

Suffolk

01

Kent

02

Surrey

03

West Sussex

04

East Sussex

05

06

07

08

09

10

11

12

13

14

15

16

17

18

19

20

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22

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156

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160

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162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

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235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

2

INDEX

Index of courses, packs, awards, subject areas and administrative information included in this brochure. Titles of courses and packs are given in *italics*.

DESCRIPTION OF TOPIC CODE PAGE

A

<i>A practical introduction to computing using MS-DOS and Framework®</i>	RT520	20
<i>A systematic approach to nursing care: an introduction</i>	P553	63
Accepting a place		3
<i>Accounting and the PC for managers</i>	B785	72
<i>Accrediting prior learning</i>	P528	67
<i>Adult learning and teaching: some skills and approaches</i>	P52-V2	67
<i>Advanced Diploma in Criminology (Prison Studies)</i>	D08	55
<i>Advanced Diploma in Educational Management</i>	D02	66
<i>Advanced Diploma in Mathematics Education</i>	D04	66
<i>Advanced Diploma in Special Needs in Education</i>	D06	66
Advisory services		2, 3, 5
Age of reason	A204	9
Ageing		63
Agriculture and land use		28
<i>An introduction to calculus</i>	MS284	35
<i>An introduction to credit unions</i>	P954	86
<i>An introduction to formal methods of software development</i>	PM687	24
<i>An introduction to information technology: social and technological issues</i>	DT200	54
<i>Analogue and digital electronics</i>	T202	76
<i>Analysis, Complex</i>	M332	34
<i>Animal physiology</i>	S324	43
<i>Applications of probability</i>	M343	38
<i>Applications, nine-month courses</i>		87
<i>Applications, study packs</i>		88
<i>Applied mathematics</i>		35
<i>Applied social studies</i>		55
<i>Applied studies in educational management</i>	EP851	66
<i>Applied studies in learning difficulties in education</i>	E806	66
<i>Applied studies in mathematics education</i>	E802	67
<i>Applied studies in post-compulsory education</i>	E860	67
<i>Approaches to adult learning</i>	E872	67
<i>Approaches to software project management</i>	PM686	24
Art history		11
<i>Art in fifteenth-century Italy</i>	A353	11
<i>Artificial intelligence</i>	PD622-4	23
Arts		7
<i>Arts, Philosophy of the</i>	AA301	16
Assessment		3
<i>Assessment and record-keeping in the primary curriculum</i>	E623	66
Astronomy	S256	45
Awards		4

B

BA degree		•4
<i>Babies and toddlers, Living with</i>	P961	86
<i>Basic cognitive processes</i>	PD561	59
<i>Basic physical science for technology</i>	T281	70
Beethoven	A341	15
<i>Behaviour, Biology: brain and</i>	SD206	42
<i>Beliefs and ideologies</i>	DE354	65
<i>Better meetings</i>	P950	86
<i>Biochemistry and cell biology</i>	S325	43
<i>Biological foundations of behaviour</i>	PD566	59
Biology		42
<i>Biology: brain and behaviour</i>	SD206	42
<i>Biology: form and function</i>	S203	42
<i>Birth, Pregnancy and</i>	P960	86
<i>Boundary habitats</i>	P587	29
<i>Britain, Restructuring</i>	D314	57
<i>British Psychological Society</i>		61
<i>Broadcast Programme Loan Scheme</i>		3
<i>Buddhism, Introduction to</i>	PA721	17
<i>Building portfolios - the trainers' view</i>	P983	86
<i>Building portfolios - the trainees' view</i>	P981	86
<i>Business Administration, MA in</i>		72
<i>Business School, Open</i>		72

C

<i>Calculators in the primary school</i>	PM537	67
<i>Calculators in the secondary school</i>	PM643	67
<i>Calculus, An introduction to</i>	MS284	35
<i>Cancers, Reducing the risk of</i>	P578	63
<i>Caring for children and young people</i>	P653	63
<i>Certificate of Professional Development in Education</i>		66
<i>Change, Planning and managing</i>	P679	72
<i>Changing Britain, changing world: geographical perspectives</i>	D205	57
<i>Changing countryside, The</i>	PD770/D770	29, 30
Chemistry		45
<i>Child abuse and neglect: an introduction</i>	P554	63
Childhood		
(Education for family life)	PE631	67
<i>Childhood 5-10</i>	P913	86
<i>Children Act 1989: putting it into practice, The</i>	P558	63
<i>Children and young people, Caring for</i>	P653	63
<i>Children and young people, Working with</i>	K254	63
<i>Children, language and literature</i>	P530	66
Closing dates		87
Co-operative working	P944	86
<i>Cognitive development: language and thinking from birth to adolescence</i>	E362	61
<i>Cognitive psychology</i>	D309	60
<i>Commercial data processing with Cobol, Introduction to</i>	PM682	21
<i>Common Lisp for knowledge engineering</i>	PD623	23
<i>Communication and education: language, media and information in education</i>	EH207	54
<i>Community care</i>	K662	63
<i>Community education</i>		86
<i>Complex analysis</i>	M332	34
<i>Complexity, management and change: applying a systems approach</i>	T301	72
<i>Computational mathematics</i>	M371	36
<i>Computer architectures and operating systems</i>	PMT601	25
<i>Computer-aided design</i>	T363	73
<i>Computer-aided engineering</i>	PT616	81
<i>Computer-marked assignments</i>		3
<i>Computers and learning</i>	EH232	66
<i>Computers, courses using</i>		4
<i>Computers, Microprocessor-based</i>	T223	76
Computing		19
<i>Computing for Commerce and Industry</i>		25
<i>Computing using MS-DOS and Framework®, A practical introduction to</i>	RT520	20
Conditions of sale		89
Conservation		28
<i>Conservation for Land Managers</i>	P585-9	28

<i>Consumer action kit</i>	CE9300	86
<i>Control engineering</i>	T394	78
<i>Corporate financial strategy</i>	B883	72
<i>Coronary heart disease: reducing the risks</i>	P575	63
<i>Cosmology</i>	S354	50
<i>Counselling</i>	E874	67
<i>Countryside, The changing</i>	PD770/D770	29, 30
<i>Course certificate</i>		4
<i>Course materials</i>		3
<i>Creative management</i>	B882	72
<i>Credit rating</i>		6
<i>Credit unions, An introduction to</i>	P954	86
<i>Crime, justice and society</i>	D310	62
<i>Criminology, Advanced Diploma in</i>	D08	55
<i>Culture and belief in Europe 1450-1600</i>	A205	8
<i>Curriculum and learning</i>	E271	66
<i>Curriculum development</i>		66
<i>Curriculum in action: practical classroom evaluation</i>	P533	66
<i>Customer and client relations, Managing</i>	B786	72

D

<i>Data analysis for information systems design</i>	PM681	22
<i>Data models and databases</i>	M357	22
<i>Deaf people, Social work with</i>	D601	56
<i>Deafness, Issues in</i>	D251	62
<i>Death and dying</i>	K669	63
<i>Decision-making, professional judgment and</i>	D300	55
<i>Degree-level courses</i>		2, 6
<i>Degrees</i>		4, 5
<i>Delivering NVQs: a guide to staff development</i>	P526P	67
<i>Delivering NVQs: diploma option</i>	E670	67
<i>Democracy and city state, Fifth-century Athens:</i>	A294	8
<i>Democratic government and politics</i>	D308	58
<i>Design and engineering mechanics</i>	T331	80
<i>Design and innovation</i>	T362	73
<i>Design and technology</i>		73
<i>Design perspective, The (Microelectronics for Industry)</i>	PT506	75
<i>Design, Managing</i>	P791	72
<i>Design: principles and practice</i>	T264	73
<i>Designing and reporting experiments</i>	PD567	59
<i>Developing an open learning package</i>	H521	67
<i>Development, Third World</i>	U208	85
<i>Differential equations, Numerical methods for</i>	M372	37
<i>Digital electronics, Analogue and</i>	T202	76
<i>Digital electronics, Introductory</i>	PT503	74
<i>Digital telecommunications</i>	T322	77
<i>Digital telecommunications: switching</i>	PT628	75
<i>Digital telecommunications: transmission</i>	PT629	76
<i>Diplomas, registration for</i>		87
<i>Disabilities, students with</i>		4, 89
<i>Disability - changing practice</i>	K665X	63
<i>Disability - identity, sexuality and relationships</i>	K665Y	63
<i>Disability studies</i>		63
<i>Discounts for study packs</i>		89
<i>Discovering physics</i>	S271	49
<i>Disease, Health and</i>	U205	85
<i>Doing prison research</i>	D803	55
<i>Drug use and misuse</i>	P576	63

E

<i>Earth sciences</i>		47
<i>Earth's physical resources, The</i>	S238	48

DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE
East Anglian studies: history of the environment	PS731	30	Genetics	S298	42	International marketing	P672	72
East Anglian studies: nineteenth century	PA730	17	Geography		57	Introduction to Buddhism	PA721	17
Ecology	S326	44	Geology	S236	47	Introduction to calculus, An	MS284	35
Economics		56	Getting ready for pregnancy	P901S	86	Introduction to commercial data processing with Cobol	PM682	21
Economics and government policy	D345	57	Girls into mathematics	PM645	67	Introduction to economics	D210	56
Economics, Introduction to	D210	56	Global politics	D312	58	Introduction to Hinduism	PA720	17
Education		66	Governing schools in the 90s: into action	PE636	66	Introduction to information technology: social and technological issues, An	DT200	54
Education and society, 'Race',	ED356	63	Government and politics		58	Introduction to non-linear dynamics	MS323	37
Education and work		66	Government policy, Economics and	D345	57	Introduction to psychology	DSE202	59
Education for family life		67	Graphs, networks and design	TM361	70	Introduction to pure mathematics	M203	34
Education, Certificate of			Grasslands, heaths and moors	P589S	29	Introduction to systems analysis and design	PM684	22
Education, Professional Development in		66	'Green' issues	U206	28	Introduction to thermofluid mechanics	T236	79
Education, MA in		66	Group bookings		87	Introductory digital electronics	PT503	74
Educational issues, Exploring	E208	64	Group notes	CES909	86	Issues in deafness	D251	62
Educational management		66	Group work		86	Issues in women's studies	U207	86
Educational psychology		60	Guarantee (study packs)		89	Italy 1943-54	A324	10
Effective manager, The	B784	72				Italy, Art in fifteenth-century	A353	11
Electromagnetism	SMT356	51	H					
Electronic materials and devices	T393	78	Health and disease	U205	85			
Electronics and communications		74	Health and health care		63			
Electronics, Analogue and digital	T202	76	Health and lifestyle		86			
Electronics, Introductory digital	PT503	74	Health and retirement	P599	86			
Electronics, Materials for	T253	82	Health and social welfare		63			
Elements of music	A241	14	Health and Social Welfare, Diploma in		63	James Joyce	PA711	13
Engineer's perspective, The (Microelectronics for Industry)	PT505	75	Health and well-being, The construction of	K660	63	Jazz, The rise of	PA703	14
Engineering - see Manufacturing		80, 81	Health choices	P921	86	Justice and society	D310	62
Engineering materials		81	Health services, Managing	B782	72			
Engineering mechanics		79	Healthy eating	P964	86			
Engineering mechanics: solids	T235	79	Heat transfer: principles and applications	T333	80	K		
Engineering mechanics: solids and fluids	T331	80	Higher degrees		5	Knowledge engineering	DM864	25
Enlightenment, The	A204	9	Hinduism, Introduction to	PA720	17	Knowledge engineering	PD624	23
Environment	U206	28	History		12	Knowledge engineering, Common Lisp for	PD623	23
Environmental control and public health	T234	31	History of art		11			
Environmental education		27	History of mathematics, Topics in the	MA290	39			
Environmental history		30	History of science and technology	A282	10			
Environmental monitoring and control	T334	31	History of science and technology	AS283	9	Land Managers, Practical Conservation for	P585-9	28
Environmental science		30	Home and neighbourhood		86	Language and communication		66
Equal opportunities policy		3	Home computing		4	Language understanding: a cognitive approach	PD563	59
Ethics	A310	16	Home kits		3, 88	Leading a group	CE0009	86
European market, the single	P787	72	How we see the world	P524	67	Learning and teaching mathematics	EM236	67
Every child's language	P534	66	Human-computer interaction	PMT607	25	Learning difficulties in education, Applied studies in	E806	66
Evolution	S365	44	Human resource management		72	Learning for all	E242	66
Examinations		3	Human resource strategies	B884	72	Learning later	P982	86
Expert systems	PD622-624	23				Learning Materials Sales Office		89
Exploring educational issues	E208	64				Learning strategies in continuing education: teaching approaches, methods and aids	P521	67
External recognition		4				Learning to use statistical tests in psychology	PD568	59
F			I			Learning, Personality, development and	E206	60
Failure of stressed materials	T353	83	Ideologies, Beliefs and	DE354	65	Lebesgue integral, The	M431	35
Family life, Education for		67	Images and information (imaging systems)	ST291	50	Letter, Results		4
Family lifestyles	PE630	67	Implementation of new technologies	PT621	81	Level of study		2
Fee payment, nine-month courses		87	Implementing NVQs: a staff development guide	P527	67	Liberation and reconstruction: politics, culture and society in France and Italy 1943-54	A324	10
Fee payment, study packs		89	In-service education for teachers		66	Life and death	A310	16
Fifth-century Athens: democracy and city state	A294	8	Industrial Applications of Computers		25	Literature		13
Finance and accounting		72	Industrial relations - see Management		72	Literature in the modern world	A319	13
Financial and resource management in schools	PE633	66	Industry and education		66	Literature, MA in		14
Financial assistance		87, 89	Information systems		22	Living choices	P935	86
Financial resources, Managing	B793	72	Information systems and IT for managers	P792	72	Living with babies and toddlers	P961	86
Fluid mechanics, Mathematical methods and	MST322	37	Information technology: social and technological issues, An introduction to	DT200	54	Logic, mathematical, Number theory and	M381	35
Food production systems	T274	71	Initial teacher education		67	London, Open	PA732	16
Food production systems, Teaching and learning technology in schools:	ET887	66	Inorganic chemistry	S343	47	Look after yourself	P595	86
Formal methods of software development, An introduction to	PM687	24	Inorganic chemistry: concepts and case studies	S247	45	Looking into paintings	PA786	11
Foundation courses		6	Instrumentation	T292	77			
Frameworks for teaching	EP228	67	Instrumentation (electronics), Teaching and learning technology in schools:	ET897	66			
France 1943-54	A324	10	Intensive Prolog	DM862	25	Making school-centred INSET work	P536	66
From Baroque to Romantic: studies in tonal music	A314	15	Intensive Prolog	PD622	23	Management		72
Fundamentals of computing	M205	20	International affairs	D312	58			
G								
Gender, issues in	U207	86						

DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE
Management perspective, The (Microelectronics for Industry)PT504		74	Minority groups	ED356	63	Planning retirement	P941	86
Management planning (Practical Conservation for Land Managers)	P585	28	Minority groups	U207	86	Poetry – see Literature		13
Management Project, The	P799	72	Modelling with mathematics: an introduction	TM282	36	Policy-making in education	E333	64
Management, a systems approach to	T301	72	Modern art and Modernism: Manet to Pollock	A315	11	Politics		58
Management, Manufacturing	PT613	81	Moral philosophy	A310	16	Pollution control	T234/T334	31
Management: policy and merchandising, Retail	B783	72	Music		14	Polymer engineering	PT614	81
Managing and governing schools		66	Music, Elements of	A241	14	Post-compulsory education		67
Managing change		72	N			Post-compulsory education, Applied studies in	E860	67
Managing customer and client relations	B786	72	Networks and design	TM361	70	Postgraduate Diploma in Computing for Commerce and Industry		25
Managing design	P791	72	Non-linear dynamics, Introduction to	MS323	37	Postgraduate Diploma in Manufacturing: Management and Technology		81
Managing financial resources	B793	72	Number theory and mathematical logic	M381	35	Practical Conservation for Land Managers	P585–9	28
Managing health services	B782	72	Numerical analysis and operational research	M371	36	Pre-school child, The	P912	86
Managing in organizations	T244	71	Numerical methods for differential equations	M372	37	Pregnancy and birth	P960	86
Managing in the competitive environment	P790	72	Nursing	P553	63	Preventing difficulties in learning, Teaching for diversity:	EP538	66
Managing people	P676	72	NVQs at work: a guide for employers	P527E	67	Previous knowledge required		6
Managing public services	B887	72	NVQs: a guide to staff development, Delivering	P526P	67	Primary science: case studies in learning and assessment	EHP532	66
Managing schools	E325	66	NVQs: a staff development guide, Implementing	P527	67	Primary science: why and how	EHP531	66
Managing voluntary and non-profit enterprises	B789	72	NVQs: diploma option, Delivering	E670	67	Principles of orchestration	PA702	14
Manufacture, materials and design	PT610	81	O			Prison research, doing	D803	55
Manufactured products: custom chips in	PT504–6	74	Oceanography	S330	48	Probability and statistics	M245	38
Manufacturing		80	Older people, Working with	P654S	63	Probability, Applications of	M343	38
Manufacturing management	PT613	81	On the line: telephone counselling and teaching	P519	67	Problem-solving: a cognitive approach	PD564	59
Manufacturing: Management and Technology		81	Open Business School		72	Professional Certificate in Management		72
Manufacturing: Management and Technology, MSc in		81	Open Guides to Psychology	PD561–8	59	Professional development in action	E621	66
Manufacturing: Management and Technology, Postgraduate Diploma in		81	Open learning	E873	67	Professional Development in Education, Certificate of		66
Marine science	S330	48	Open London	PA732	16	Professional Diploma in Management		72
Marketing		72	Opening the single market	B787	72	Professional Diploma in Post-compulsory Education	D05	66
Materials		81	Optics	ST291	50	Professional Diploma in Social Work with Deaf People	D09	56
Materials and design, Manufacturing	PT610	81	Orchestration, Principles of	PA702	14	Professional judgment and decision-making	D300	55
Materials and devices, Electronic	T393	78	Organic chemistry	S246	45	Programme design and assessment	E876	67
Materials and engineering mechanics	T331	80	Organic chemistry: a synthesis approach	S344	46	Programming and programming languages	M353	21
Materials for electronics	T253	82	Organizations, Managing in	T244	71	Programming, computer		21
Materials in action	T201	81	Overseas orders		89	Project management (computing for commerce and industry)	PMT605	25
Materials in manufacturing	T255	83	Overseas residents		88	Project Mathematics		
Materials, physics of	S272	50	P			Update	PM750–3	67
Materials, Stress on	T254	82	Packs, study		2, 6, 88	Prolog, Intensive	PD622	23
Mathematical methods and fluid mechanics	MST322	37	Paintings, Looking into	PA786	11	Providing for special needs: policy and practice	E877	67
Mathematical models and methods	MST204	36	Parents and teenagers	P914	86	Psychology		59
Mathematics		33	Parents talking – family relationships	P597	86	Psychology, An introduction to	DSE202	59
Mathematics education		67	Parents talking – the developing child	P596	86	Psychology, Open Guides to		59
Mathematics Education, Advanced Diploma in	D04	66	Pascal, Structured programming with UCSD	PM683	21	Public health, Environmental control and	T234	31
Mathematics education, Applied studies in	E802	67	Patterns for living: working together	P555M	63	Pure mathematics		34
Mathematics in computing	M261	20	Payment methods for courses		87	Pure mathematics, Introduction to	M203	34
Mathematics in the primary curriculum	E627	67	Payment methods for study packs		89	Q		
Mathematics, Girls into	PM645	67	Perception and representation: a cognitive approach	PD565	59	Qualifications		4, 5
Mathematics, history of	MA290	39	Personality, development and learning	E206	60	Quality systems	PT622	81
Mathematics, MSc in		34	Personnel selection and interviewing	P673	72	Quality techniques	PT619	81
Matter in the Universe	S256	45	Philosophy	AA301	16	Quantum mechanics	SM355	51
Matter, The physics of	S272	50	Philosophy of the arts			R		
MBA		72	Physical chemistry: principles of chemical change	S342	46	'Race', education and society	ED356	63
Mechanics, engineering	79		Physical science for technology, Basic	T281	70	Radio programmes		3
Mechanics, Visualizing	PM640	67	Physics		49	Reading – see Language and communication		66
Media education: an introduction for teachers	PE632	66	Physics for science teachers	PSEH545	66	Real-time control	PMT604	25
Memory: a cognitive approach	PD562	59	Physics of matter, The	S272	50	Real-time monitoring systems	PMT602	25
Mental handicap: changing perspectives	K668	63	Physiology – see Biology			Receipts		87
Mental handicap: patterns for living	P555	63	Physiology, Animal	S324	43	Recognition of courses		4
Mental health problems in old age	P577	63	Planning and managing change	P679	72	Reducing the risk of cancers	P578	63
Microelectronics for industry	PT504–6	74				Refunds (courses)		87
Microprocessor-based computers	T223	76				Refunds (study packs)		89
Minority groups	D251	62				Regional studies – see Geography		57
						Regions, Open University		90
						Religion		17
						Religion in Victorian Britain	A331	10

DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE	DESCRIPTION OF TOPIC	CODE	PAGE
Remote sensing	PS670	30	Summer school – see residential school	3, 6		Towards IPM Stage 2	P786	72
Research degrees		5	Supporting primary mathematics	PM649S	67	Transmission, Digital telecommunications:	PT629	76
Residence requirements		3, 88	Switching, Digital telecommunications:	PT628	75	Tuition		3
Residential school		3, 6	Switching for digital telecommunications	T820	25	U		
Resource utilization: energy and materials	PT612	80	Symphony, The rise of the	PA704	14	UCSD Pascal, Structured programming with	PM683	21
Resources, The Earth's physical	S238	48	Systematic approach to nursing care: an introduction, A	P553	63	Undergraduate study		2, 6
Restructuring Britain	D314	57	Systems		71	Understanding modern societies	D213	64
Results letter		4	Systems analysis and design, Introduction to			Understanding pregnancy and birth	P902S	86
Retail management: policy and merchandising	B783	72	PM684	22		Understanding space and time	S354	50
Retirement, Planning	PA703	14	Systems, Food production	T274	71	Understanding the continents: tectonic and thermal processes of the lithosphere	S339	49
Rise of jazz, The	PA704	14	Systems, Working with	T247	71	'University courses'		85
Rise of the symphony, The			T			Urban habitats	P584S	29
Roles and relationships	K663	63	Talk and learning 5 to 16: an in-service pack on oracy for teachers	P535	66	Using mathematical thinking	ME234	67
Rome: the Augustan age	A293	8	Talking with young people	P525	67	V		
Routes to algebra	PM641	67	Taught master's degrees		5	VAT		89
Running the country	D212	54	Teacher training	EP228	67	Video cassettes		88, 89
Rural studies – see Conservation		28	Teachers into business and industry	PE634/E622	66	Visualizing mechanics	PM640	67
S			Teaching – see Education			W		
Schools – see Education		66	Teaching and learning technology in schools	ET887/897	66	W. B. Yeats	PA710	13
Schools, teaching and the wider world	EP228W	67	Teaching for diversity: preventing difficulties in learning	EP538	66	War, peace and social change: Europe 1900–1955	A318	12
Science		41	Technology		69	Water and wetlands	P588S	29
Science and technology, history of	A282	10	Technology education		66	Welfare, Health and social		63
Science and technology, history of	AS283	9	Technology in secondary schools	EPT539	66	Welfare, social	D211	62
Science education		66	Technology, history of science and	A282	10	Wetlands, Water and	P588S	29
Science for primary teachers	PS548/S622	66	Teenagers, Parents and	P914	86	What is software engineering?	PM685	24
Science in the primary curriculum	E625	66	Telecommunications, Digital	T322	77	Women and young children	P593	86
Science, technology and everyday life 1870–1950	A282	10	Telecommunications: switching, Digital	PT628	75	Women into management	P675	72
Scientific Europe 1500–1800, The rise of	AS283	9	Telecommunications: transmission, Digital	PT629	76	Women's studies, Issues in	U207	86
Scottish studies	PA734	17	Telephone counselling and teaching, On the line:	P519	67	Women, writing and culture	PU712	13
Secondary mathematics: classroom practice	PM644	67	Television programmes		3	Woodlands	P586	29
Set books		6	The challenge of the external environment	B885	72	Work and retirement		86
Shakespeare	A361	13	The changing countryside	PD770/D770	29, 30	Work and society	DE325	65
Signal processing – see Electronics and Communications		74	The Children Act 1989: putting it into practice	P558	63	Work choices	P942	86
Social history – see Arts (Interdisciplinary and History)		8, 12	The construction of health and well-being	K660	63	Working in classrooms	EP228C	67
Social policy		62	The design perspective (Microelectronics for Industry)	PT506	75	Working in schools	EP228S	67
Social problems and social welfare	D211	62	The Earth's physical resources	S238	48	Working mathematically on film with sixth-formers	PM647B	67
Social psychology: development, experience and behaviour in a social world	D307	60	The effective manager	B784	72	Working mathematically on mental imagery with third-formers	PM647C	67
Social sciences		53	The engineer's perspective (Microelectronics for Industry)	PT505	75	Working mathematically with infants	PM647D	67
Social welfare, Health and		63	The Enlightenment	A204	9	Working mathematically with sixth-formers	PM647A	67
Social work with deaf people	D601	56	The Lebesgue integral	M431	35	Working mathematically within a whole school	PM647F	67
Sociology		64	The management perspective (Microelectronics for Industry)	PT504	74	Working together (school-based professional development in mathematics)	PM648	67
Software engineering	M860	24	The Management Project	P799	72	Working with children and young people	K254	63
Software engineering, Topics in	M355	25	The Open Business School		72	Working with older people	P654S	63
Software project management, Approaches to	PM686	24	The physics of matter	S272	50	Working with pupils	EP228P	67
Space and time, Understanding	S354	50	The pre-school child	P912	86	Working with systems	T247	71
Special needs in education		66	The religious quest	A228	17	Working with under-fives	PE635	66
Sponsorship		88	The rise of jazz	PA703	14	Working with videotape of a mathematics classroom	PM647E	67
Staff development		72	The rise of scientific Europe 1500–1800	AS283	9	Workload		3, 6
Statistical investigations in the secondary school	PM646	67	The rise of the symphony	PA704	14	Writing, women's	PU712	13
Statistical methods	M345	39	Themes in British and American history: a comparative approach	A317	12	Y		
Statistics		38	Thermofluid mechanics, Introduction to	T236	79	Y plentyn bach	P912BW	86
Statistics in society	MDST242	38	Third World development	U208	85	Yeats, W. B.	PA710	13
Strategic management	B881	72	Time required for study		3, 6	Young people, Caring for children and	P653	63
Stress on materials	T254	82	Time, Understanding space and	S354	50	Young people, Working with children and	K254	63
Structure and design of manufacturing systems	PT611	81	Toddlers, Living with babies and	P961	86	Youth and community work, training for		86
Structured programming with UCSD Pascal	PM683	21	Topics in software engineering	M355	25			
Students' Association		88	Topics in the history of mathematics	MA290	39			
Study centres		90						
Study levels		6						
Study packs		2, 88						
Study period		6						
Study texts		3						
Studying with the Open University		2, 5						



SUP 24423 0